NORTH EAST GREENHOUSE ALLIANCE
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Final Report

North East Victoria Adapting to a Low Water Future

Phase 3

Stakeholders Behavioural Study and Analysis

December 2011

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Phase 3: Stakeholders Behavioural Study and Analysis
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The Regional Development Company

1. Introduction

1.1 Background

The Regional Development Company (RDC) and Fishbowl PR were engaged by the North East Greenhouse Alliance (NEGHA) to undertake an analysis of the drivers and barriers for key stakeholders in the North East region to implementing critical actions for adapting to climate change, and to make recommendations to overcome those barriers. The analysis, referred to as the *Stakeholders Behavioural Study and Analysis*, is part of the *North East Victoria Adapting to a Low Water Future* project.

The *North East Victoria – Adapting to a Low Water Future* project is funded by the Australian Government under the Strengthening the Basin communities component of the Water for the Future program. It is being delivered by the North East Greenhouse Alliance on behalf of City of Wodonga, Rural City of Wangaratta, Alpine, Indigo and Towong Shires, in partnership with the North East Catchment Management Authority, North East Water and Goulburn Murray Water.

The *North East Victoria – Adapting to a Low Water Future* project comprises of three integrated elements, namely:

Phase 1 – Project Context setting
Phase 2 – Climate Change Risk Assessment and Adaptation Planning
Phase 3 – Development and Delivery of Practical Solutions

This *Stakeholders Behavioural Study and Analysis* is an element of Phase 3.

The agreed objectives for the *Stakeholders Behavioural Study and Analysis* were to:

1. Develop an understanding of barriers and opportunities to embedding sustainability into day to day business including planning for sustainable outcomes and the implementation of the adaptation plan (produced in Phase 2)

2. Develop an understanding of awareness, perceptions, attitudes and behaviour at all levels of target organisations in relation to climate variability and the implications for sustainability

3. Investigate current practices, behaviour and perceptions within local agencies related to sustainability and the implementation of the adaptation plan

4. Provide the basis for moving to sustainability being a core part of each agency's strategic intent

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1.2 Building Ownership

In addition to the above objectives, the Steering Committee agreed to another stage in the project entitled 'Building Ownership', which involved outlining the purpose of the Behavioural Study to the partner CEOs and building in their organisational 'buy-in' to the overall Adapting to a Low Water Future project.

This came about following the literature review and meetings with the CEOs from each of the five councils. These CEOs were concerned that Councils had insufficient knowledge of the entire Adapting to a Low Water Future project to provide useful input into the original planned stages of the project.

As a result, the project was revised to include the CEOs requests to provide further briefings to their councillors and/or senior executives and to work with each of the five councils separately.

1.3 Products from the Stakeholders Behavioural Study and Analysis project

The products from this project include:

- Project Plan and Consultation Schedule
- Literature Review
- Background Briefing (written report provided to Councils and agencies)
- Projects Overview document (summaries of all key reports in Adapting to a Low Water Future up to July 2011)
- Case studies for each Council (exploring overcoming behavioural barriers)

1.4 Structure of this report

This report contains the following sections:

1. Introduction
2. Purpose
3. Context
4. Key activities
5. Case studies
6. Lessons Learnt
7. Recommendations

2. Purpose

The overall purpose of the Stakeholders Behavioural Study and Analysis project was to:

> *Raise awareness amongst stakeholders around behaviour change as it applies to sustainability and climate change and provide guidance to assist with creating this behaviour change, relevant to the participating organisations.*

The key outcome for this project is the undertaking and analysis of consultation about behaviours, attitudes, perceptions and beliefs, and a report which details recommendations for approaches which will meet the needs of the organisations involved.

3. Context

The original proposal for this project made the assumption that the drivers and barriers to behaviour change were unknown within the partner organisations. It therefore involved the following stages:

Stage 1: Inception, Project and Consultation Planning

Stage 2 Situation Analysis (including literature review)

Stage 3: Building Ownership

Stage 4: Consultation Planning and Preparation

Stage 5: Consultation

Stage 6: Analysis and Reporting, Recommendations

Findings from the literature review investigating 'Drivers and Barriers to embedding sustainability in local government' found that a considerable body of research and good practice evidence exists on drivers and barriers and ways forward.

Subsequent telephone meetings with all CEOs (conducted to outline the project, provide an update from the research and explore how best to proceed in a way that would also meet their concerns and needs), showed it was evident that the original planned process of internal organisational surveys and focus groups were not supported. The CEOs clearly said that their Councils had insufficient knowledge of the entire Adapting to a Low Water Future project to provide useful input, and requested briefings to their councillors and/or senior executive teams before the project continued.

This led to the project activities being revised to incorporate the learnings from the literature review and address the information gaps with the Councils.

3.1 Revised Approach

The RDC team met with the NEGHA project manager and the project was revised to include the CEO's requests and re-arranged to deliver an outcome that was of value to each organisation, according to the respective CEOs.

High level briefings took place with each council, Department of Sustainability and Environment (DSE), Goulburn Murray Water (GMW) and North East Catchment Management Authority (NECMA). RDC provided a briefing note, power point presentation, summaries of the Adapting to a Low Water Future project, (and the subsequent Socio-Economic Adaptation Plan project) and an overview of the two projects. The CEOs also requested that RDC briefed the North East Local Government Network on the overall projects, and request feedback from that group.

RDC asked Councils to advise how the remaining funds in the Behavioural Study project could best be used in order to meet the original objectives.

As a result, Councils have organised workshops as part of the Behavioural Study. These are presented as case studies, one for each participating council. The case studies outline the ways to potentially overcome barriers and utilise drivers to embed sustainability.

4. Key activities

The key (revised) activities involved in this project were:

- Literature review

- Stakeholder meetings (with councils and key agencies) to brief them on the project and test the outcomes

- Additional stakeholder briefings with councillors and/or senior executives

- Facilitated workshops with each council to progress council specific projects

4.1 Literature review

Approach

This literature review (conducted in June-July 2011) was undertaken to provide an initial understanding of potential drivers and barriers (including institutional and attitudinal) to partner organisations embedding responses to climate change and sustainability. The literature review was also used to help frame the subsequent consultations as part of the Stakeholders Behavioural Study and Analysis.

The review covered key local government and water agency guiding documents including region wide strategies and plans of individual councils and agencies. The review also considered a range of reports that have examined barriers for organisations in embedding sustainability into their everyday activities, and provides frameworks and methods for moving sustainability considerations into their core operations. In addition the review considered a number of reports that have addressed the issue of barriers to climate change adaptation.

The following documents were reviewed, with full details in the Literature Review (Appendix One):

- The Hume Strategy for Sustainable Communities 2010 – 2020
- Alpine Shire Council – Council Plan 2009 – 2013: 2010 Update
- Indigo Shire Council – Council Plan 2009 – 2013: 2010 Update
- Towong Shire Council – Council Plan 2009 – 2013: 2010 Update
- Rural City of Wangaratta – Council Plan 2009 – 2013
- City of Wodonga – Council Plan 2009 – 2013
- North East Water – Corporate Plan 2010 - 2011
- Goulburn-Murray Water – Corporate Plan 2010/11 – 2015/15
- North East Victoria - Adapting to a Low Water Future: Phase 3: Revision of Existing Council Plans and Strategies (2011)
- North East Victoria - Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan (2011)

- Background to Environmental Assessment Tool
- Environmental Assessment Tool
- Environmental Assessment Tool – Lessons Learnt
- Choices, Choices - Environmental and Sustainability Reporting in Local Government in Victoria
- Institute for Sustainable Futures – Drivers to Sustainability in Local Government
- Barriers to Sustainability in Organisations
- Community Based Social Marketing
- New Indicators of Vulnerability and Adaptive Capacity
- Framing Vulnerability and Adaptive Capacity Assessment
- Adapting to Climate Change through local municipal planning: barriers and challenges
- ICLEI - Cities for Climate Protection Australia
- Adaptation Initiative: Local Government Climate Change Adaptation Toolkit
- A Framework to Diagnose Barriers to Climate Change Adaptation

Findings

Regional Guiding Plans and Strategies clearly recognise and plan for the implications of, and adaptation to climate change.

The five councils of the study area (Alpine, Indigo, Towong, Wangaratta and Wodonga) have Council Plans that provide statements recognising the need for adaptation to climate change, and variously provide support strategies. The councils have identified further strategies and initiatives to be developed.

The literature review clearly identified relevant and practical studies specifically related to barriers and drivers of sustainability within local government. The table below summarises the key drivers and barriers identified.

Table 1: Key barriers and drivers to embedding sustainability in local government

Drivers	Barriers
Understanding of issues, and setting direction: what are we adapting to; who adapts; how do we adapt; what do we want to achieve	Lack of resources (financial and human)
Good organisational structures which mean that sustainability is clearly embedded, clear roles and responsibilities, and non-siloed approach (eg sustainability teams across the organisations)	Leadership – lack of clear understanding of vulnerability to climate variability/change
Clear goals and measures (what gets measured, gets managed)	Communication and information (language of sustainability, gap between theory and practice)
Dedicated staff (with senior management and councillor support) working within a sympathetic organisational culture	Deeply held values and beliefs

The **main drivers or enablers** to sustainability in local government were identified in various studies:

Institute for Sustainable Futures – Drivers to Sustainability in Local Government (2009)
Pillora S, Blackburn N, Artist S

- General manager and senior management support
- Mayor and councillor leadership
- Media coverage of global and local issues
- Active and engaged communities
- Dedicated sustainability staff
- A sympathetic organisational culture
- Effective management systems
- External funding
- Supportive legislation and partnerships
- External agency support

Choices, Choices - Environmental and Sustainability Reporting in Local Government in
Victoria (2011) Auty, K

- Organisational structures that *"embed sustainability within an organisation, to sustain sustainability efforts, and to facilitate the cultural and behavioural change necessary for success"* (p 24)

- The report suggests a number of specific organisational structures that can be established, or specific actions that can be taken, to facilitate sustainability, including:

  o establishing formal positions for sustainability with clearly defined roles and responsibilities, such as individual roles, teams, committees, or other groups;
  o providing teams or individuals with adequate power, authority and resources and ensure they have the appropriate technical and political skills;
  o establishing systems to build the knowledge and capacity of employees and to facilitate the sharing of knowledge and learning across an organisation.

- The report also finds that organisational structures, such as sustainability teams, have an important role in facilitating cultural change. (p. 14).

Adapting to Climate Change through local municipal planning: barriers and challenges (2011)
Measham T, Preston BL, Smith TF, Brooke C, Withycombe RG, Morrison C

- Identified internal and external barriers and challenges, but suggests the way forward is to:
- *First, to move beyond mitigation to include a focus on adaptation in practical terms;*

- *Second, to push for reform at higher levels of government to enable changes in the planning frameworks which currently hinder local adaptation;*

- *Third, to embed climate adaptation into a wider range of council functions. (p. 21).*

The literature review also clearly identified **challenges and barriers:**

Institute for Sustainable Futures – Drivers to Sustainability in Local Government (2009) Pillora S, Blackburn N, Artist S

The main barriers were:

- Lack of organisational support
- The gap between sustainability theory and practice
- Inadequate systems for managing information
- Competing priorities
- Availability of internal and external funding
- Limited staff capacity and high turnover
- Research and development challenges
- The language of sustainability
- Dealing with other government agencies
- Limitations of legislation in relation to sustainability provisions

Choices, Choices - Environmental and Sustainability Reporting in Local Government in Victoria (2011) Auty, K

Victorian councils were surveyed about their challenges they faced in implementing sustainability actions and embedding it into the organisation. Wangaratta, Wodonga and Towong Councils were part of the study. Councils said they faced:

- Lack of resources   78%
- Paucity (lack) of staff   74%
- Lack of knowledge/expertise 48%
- Limited community demand   33%

In addition to the point regarding lack of resources the additional costs and the task of data collection was also an issue for councils, as was the reliability of any data collected. (p. 21)

Adapting to Climate Change through local municipal planning: barriers and challenges (2011) Measham T, Preston BL, Smith TF, Brooke C, Withycombe RG, Morrison C

The study found the main limitations to climate change adaptation in local government planning were:

- Lack of resources
- Inadequate information
- Institutional limitations
- Culture of reactive management (p5)

The internal institutional limitations were primarily about where climate change responses were assigned within councils:

> *'The most acute internal limitation, noted across each of the three case study councils, was a strong tendency to assign climate adaptation (along with mitigation) to the environment section of the council. This stems from a legacy of thinking of climate change as an environmental issue.*
>
> *The challenge for local government is to recognise climate adaptation as a cross-sectoral issue'. (p. 17)*

They go on to say:

> *'Institutional 'silos' are a historic problem, and climate adaptation is a renewed reason to address the challenge of cross-sectoral integration within councils (p. 17)*

A Framework to Diagnose Barriers to Climate Change Adaptation (2010) Moser SC, Ekstrom JA

"Cross cutting barriers" identified were:

- Leadership
- Resources
- Communication and information
- Deeply held values and beliefs

As a result of the literature review, the consulting team developed Table 1 (on page 8) and drew the following conclusions:

- **Leadership** from the top of the organisation is essential for developing the understanding climate change within the organisation and getting a commitment to embedding it through local government strategic and operational plans *(Auty, K 2011; Pillora S, Blackburn N, Artist S 2009).*

- **Understanding of, and commitment to sustainability** is linked to the ownership by leaders within local government *(Measham T, et al 2011).* Local government organisations require from the councillors and senior managers to develop and implement plans as they are the people with sufficient power and resources to be enable the drivers (eg allocation of necessary resources, and setting up cross organisational structures that support embedding sustainability that have goals and measures). It is very difficult for other individuals within these organisations to overcome the barriers as they generally lack the resources and power to do much other than work within the confines of their work groups and sections.

- **Communication and sound information:** information needs to be shared initially from the organisational leaders to create clear understanding of the vulnerabilities to climate change variability holistically ie across the whole local government area and all sectors, to create a common level of understanding. This will enable an integrated approach to be taken and enable the organisation to continually learn and innovate as it applies the theory and develop an understanding of the language of sustainability. (*Auty K, 2011; Moser SC, Ekstrom J 2010*)

- Adaptation to climate change requires of **whole of organisation response**

A key message is to start with the leaders of the councils first for them to gain understanding and commitment to the principles of embedding sustainability into council plans and strategies. Once this is established, cross organisational teams can be developed to tackle different aspects of sustainability and to develop strategy and actions to support implementation.

Implicit in this process is the need for measures of sustainability that can be used to monitor progress and provide feedback to the organisation to continually drive learning and innovation. Involvement of business and community members is also implicit to enable them to bring in their ideas and knowledge to inform the processes. It is not expected that councils will get this process right all the time but instead will learn through trial and error what is practicable and workable.

4.2 Stakeholder meetings

Approach

Meetings were undertaken with councils and key agencies to brief them on the project and test the outcomes to date. Telephone briefings were conducted with all CEOs and the NEGHA project officer in June and July 2011.

The briefings covered:

- Outline of the project
- Research update (from literature review)
- Questions about how best to proceed with the stakeholder behavioural study that would increase organisation understanding and buy-in and also meet their concerns and needs

Findings

The result of this round of briefings was the understanding that the revelation by the CEOs that clearly said that their Councils had insufficient knowledge of the entire Adapting to a Low Water Future project to provide useful input. Their suggested course of action was to brief their councillors and/or senior executive teams before the project continued.

This (as previously mentioned) changed the course of the project and lead to the development of briefing notes and another round of briefings.

4.3   Additional stakeholder meetings

Approach

Face to face meetings with the Councils of Alpine Shire, Indigo Shire, Rural City of Wangaratta, Towong Shire, City of Wodonga, the Executive of the North East Greenhouse Alliance, and North East Local Government Network were scheduled for August 2011. The purpose of these briefings was to:

- Brief each organisation on the NEGHA projects funded under the Strengthening Basin Communities program

- Provide a progress update for key elements of **Adapting to a low water future**

- Describe the consultants role in the project **Stakeholder Behaviour Study and Analysis**

- Obtain feedback from each Council to ensure that this project delivers real outcomes for the councils and other stakeholder organisations

Each organisation was provided with a briefing note that outlined the purpose, background, progress to date and key questions for discussion. A projects summary was also prepared that summarised the phases of the *Adapting to a Low Water Future* project.

Findings

The outcome of these briefings was a greater understanding of the project and its outcomes by each of the key stakeholders.

In addition, each of the five councils was able to identify how the remaining funds in the Behavioural Study project could best be used in order to meet the original objectives. The result was that each council identified a project relevant to them and requested that RDC facilitate half to one day sessions with key staff to progress each project.

4.5   Facilitated workshops with each council

Approach

The following projects were identified by each Council as part of the Behavioural Study:

- Rural City of Wangaratta: how to embed their Sustainability Management Strategy (a Council Plan priority) and other key environmental strategies into a clear structure, and across council units

- Alpine Shire – embedding the findings of joint Risk Assessment and Adaptation Strategy (conducted with Towong Shire), Citizen's Jury information, and the NEGHA Climate Change Risk Assessment and Adaptation Plan findings into cross organisation directorate business plans

- Indigo Shire – strengthening the integrated planning approach to embed sustainability, developing a strategic approach for Council approval and implementation
- City of Wodonga Council – embedding sustainability into the culture and practices of City of Wodonga

Workshops were conducted in November and December 2011.

Findings

Each of the councils took steps to implementing actions that will embed sustainability into council strategies, plans and everyday operations using the facilitated workshop approach.

The details of what and how this was achieved have been compiled into the case studies that form the next section of this report.

The purpose of these case studies is to provide examples to the other councils of how each organisation tackled the issues uncovered in their organisation and what steps they took to address them.

5. Case studies

Each case study describes:

- Purpose
- Process used
- Workshop outcomes
- Intended change over time
- Relationship to the findings of the Literature Review

5.1   *Indigo Shire Council – Embedding sustainability aspirations into Council Planning*

Purpose

The purpose of the workshop was to plan a practical approach to embedding the Council's sustainability aspirations into Council plans and daily operations.

It was used to reflect on the Integrated Planning Group approach, and determine the issues and benefits in using that approach to embed sustainability.

Background

The Indigo Shire Integrated Planning Group (IPG) is intended as an important and mandatory Council staff forum aimed at providing opportunities for a wide range of departments and personnel to examine, analyse, and comment on plans, policies, strategies and projects which have an impact on the community.

Council's IPG background document states *"the IPG process provides a robust forum for review and reflection on each completed plan, policy, strategy and project, which will maximise the learning opportunity for members of the group and Council as a whole, through joint discussions of the lessons learned. This will lead to continuous improvement."*

The integrated planning approach considers projects, capital works, plans and strategies and ensures that key overlaps and considerations are taken into account in the early stages of planning, and before approvals are given. It links capital works, projects, strategic planning and statutory planning.

At the time of the workshop regarding embedding sustainability aspirations into council planning, the IPG was not yet implemented into Council practice.

Process used

A facilitated workshop was conducted with by three senior Indigo staff members: General Manager, Sustainable Communities; Manager, Project Delivery and Manager, Planning and Sustainable Development.

The key question for debate was *"how do we solidify our integrated planning approach to embed sustainability into it?"*

Workshop Outcomes

Participants discussed the benefits and concerns of using the Integrated Planning Group to enable a cross functional approach to sustainability issues.

The key issue identified was the concern already expressed internally about perceptions of additional time burdens and concerns about the potential additional work to meet the integrated planning approach.

Other points raised during the workshop:

Benefits

Discussing sustainability issues and relevant planning controls 'up front' at the start of projects ensures all issues are covered off and comprehensive decision making occurs.

Disadvantages

Current pressures on staff to ensure capital works programs are on time and to budget means staff are reluctant to engage in 'peripheral' issues that could hinder progress. Plus there are perceptions of sustainability 'zealousness' and trying to do too much too quickly.

The perceived barriers to implementation are:

- Need for clear and defined outcomes in the long term
- Many different Strategies within the council appear to have competing activities, and priorities that are not defined or integrated
- No clear measurable outcomes for sustainability – need measures to ensure what gets measured gets done
- The organisation is not ideologically driven (around sustainability) but rather process and program driven – if sustainability is not embedded, it is not adopted.
- Council staff's understanding of climate change is incomplete and everyone does not have the same understanding of impact of more dramatic weather events more often.

Overcoming barriers to implementation:

The two main ideas developed to overcome these barriers are:

- Modify the current project checklist to include broad sustainability considerations for use in the existing planning processes/systems (use existing recognised standard measures eg 6 star design standards)
- Work with the existing strong intellectual base, skills and experience that exists in the community around sustainability and climate change. Through working together with the community, Council can harness the very positive community energy, knowledge and skills to inspire extraordinary things.

The approach adopted by the Indigo Shire acknowledges that sustainability is a cross-sectoral issue but that the drive for change is going to come from the Sustainable Communities section.

For this to be successful, the General Managers will need to understand and support the actions suggested and staff will need to be prepared to work with the proposed

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changes and be able to modify the systems until they fit the needs of all parts of the planning process.

Further exploration of the barriers and solutions with staff at all levels of the Indigo Council is needed to allow staff to generate their own solutions.

Intended change over time

Indigo Council intends to use the Integrated Planning Group approach as a means to develop a culture where sustainability is considered part of normal business.

Relationship to findings in the Literature Review

Clearly the barriers to implementation identified in the Literature Review were apparent in this case:

- Concerns about lack of resources (time in particular)
- Sustainability not understood as a common issue across the organisation, and not a shared understanding of the implications of climate change

The means to overcome the barriers identified at this workshop, and being progressed demonstrate better practice in accordance with Literature Review findings:

- Good organisational structures that enable sustainability to be embedded as part of everyday business – IPG moves the considerations across the organisation
- Understanding of the issues and implications will be explored and solutions developed more widely than in one unit
- Leadership by senior management is being demonstrated
- Measures are to be put into place with clear goals (what gets measured, gets managed)

5.2 *Alpine Shire Council – Developing and Implementing a Climate Change Action Plan*

Purpose

The purpose the workshop undertaken by the Alpine Shire Council was to draw together the work completed to date both locally, sub-regionally and regionally on climate change adaptation and work to develop a Climate Change Action Plan for council.

Process used

Eight senior managers from across all directorates within the Alpine Shire and the consultant responsible for preparing the Climate Change Action Plan were involved in this workshop.

The group went through a process to:

- Cover background on climate change work in the region, and sub-regionally
- Explore the fit between those regional and sub-regional plans and council plans and processes
- Explore barriers and opportunities in the development of the Alpine Shire Climate Change Action Plan
- Developing a clear process to progress the work on an internal cross directorate Climate Change Action Plan

Background

Alpine Shire has been actively exploring the likely impacts and implications of climate change on their communities, and in their day to day business.

Previous work undertaken includes:

- Climate Change Risk Assessment and Adaptation Planning (Alpine and Towong)
- Climate Change – Reality, Myth or Hype, outcomes from the Alpine Shire Youth Council Climate Change Forum
- Alpine Citizen's Jury outcomes report – Local Voices Shaping our Future "How can we respond to a varying climate?"

Workshop Outcomes

The participants explored their understanding of the impacts and implications of climate change for Alpine Shire (council and community).

They identified the key issues, strengths on which to build, barriers to implementation and key messages for developing the Alpine Shire Climate Change Action Plan.

The key messages about the development of the Climate Change Action Plan were:

- Council must have a position on climate change, we have to recognise that we need to change, and commit to change
- We need to be optimistic and show clear leadership (organisationally)
- This is everyone's responsibility
- We need to set realistic targets, matched with funding, and quantify benefits of our actions
- We must prioritise key actions and not commit too much too quickly, however, we also need to be able to demonstrate some quick wins
- We must all work together internally and within our communities

The participants then worked on the linkages, purpose, framework, key elements and process for developing the Climate Change Action Plan.

The outcome of these discussions was a clear framework for how the Climate Change Strategy relates to, and drives other plans within the Alpine Shire (Figure 1), as well as base data for the development of the Plan.

The key purpose for the Plan is to '*embed knowledge and actions for Climate Change into Council (focused on council roles and responsibilities'*. The following framework was developed to show linkages with other strategies and plans:

2030 Vision

Municipal Strategic Statement
Sustainability Strategy
Liveability Strategy
Economic Development Strategy
(4-20 year strategies)

Council Plan (4 years)

Unit plans (operational)
(1-4 years)
Climate Change Action Plan (4 years)
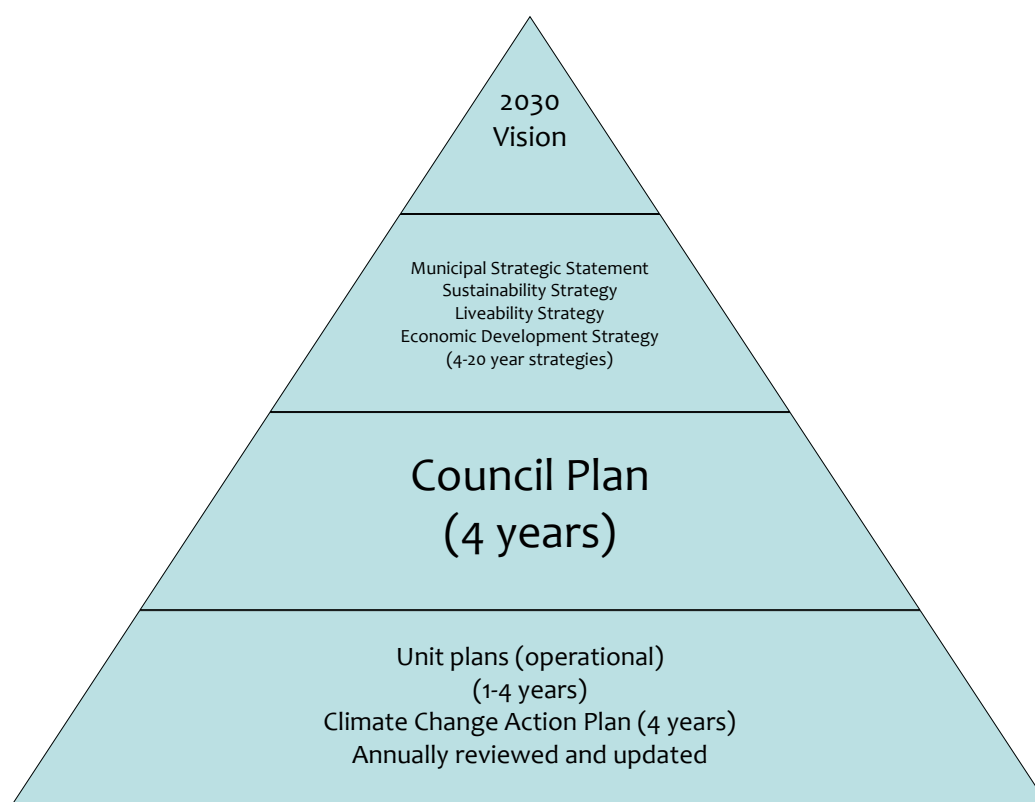**Annually reviewed and updated**

Figure 1: Strategic Planning Framework and hierarchy for the Alpine Shire Council

Principles developed:

- The Climate Change Action Plan needs to prioritise existing actions from plans
- Checklists need to be in the plan
- Templates for decision making need to be developed
- We must make sustainability everyone's business

The document will have 2 key sections: Leading by Example (relates to council's responsibilities), and Enabling and Educating our Community (using recommendations from Local Voices)

Intended change over time

Alpine Shire Council intends to embed sustainability into both strategic planning and daily operations of council, as well as develop and respond to community regarding the implications of climate change.

The next steps are the completion, adoption and implementation of the Climate Change Adaptation Action Plan.

Relationship to the literature review

This project took the approach of building sustainability into the cross sectional plans that guide and inform the divisional operational plans. This will enable sustainability to be embedded in the organisation and avoid the isolation of being seen as an 'environmental' issue.

The next challenge for the organisation is ensuring that the levels of understanding about sustainability, and how it will be interpreted from strategy to operational planning are developed by staff at all levels of the organisation. Specific measures of sustainability are important in providing concrete reference points for monitoring progress.

5.3   Rural City of Wangaratta – Developing a Sustainability Strategy Framework

Purpose

The purpose of the workshop was to develop a way to unite the various existing (and to be developed) plans into an overarching environmental sustainability framework with linking strategies.

Process used

Two senior people from the Rural City of Wangaratta were involved in a workshop to build a framework for sustainability for the council. They were the Director of Sustainability and the Manager, Environment.

They explored

- the barriers and drivers to embedding sustainability into council
- documentation of the different approaches taken by council to date
- looking at what has been done, getting clear about what is in place, and building some consensus about where to from here

The process involved reviewing the Environmental Sustainability Strategy framework as it currently exists, and identifying how sustainability strategies and actions from the Council Plan and the 2030 Community Vision can be incorporated.

Workshop Outcomes

The existing Environmental Sustainability Strategy Framework was complex with many layers, interconnected reports and much work to be done.

Victorian Local Sustainability Accord funding to develop an overarching Sustainability Strategy and Corporate Strategy had already been secured. (This is a source of funding that could be used to support other council initiatives).

During the workshop, the participants developed a clearer and more refined approach, and developed a new framework of four key strategies:

1. Sustainability strategy
2. Corporate Sustainability strategy
3. Natural Environment strategy
4. Community Sustainability strategy

The outline of each strategy is to be endorsed by Council.

The purpose of each strategy, scope, indicators and targets, links, time frames and actions (developed during the workshop) are outlined in Table 2.

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Table 2: Rural City of Wangaratta – Outcomes from Behavioural Study and Stakeholder Project facilitated meeting

	SUSTAINABILITY STRATEGY	CORPORATE SUSTAINABILITY STRATEGY	NATURAL ENVIRONMENT STRATEGY	COMMUNITY SUSTAINABILITY STRATEGY
Ownership	Council	Organisation	RCOW and Agencies and Interest Groups	RCOW and Community
Purpose	▪ Vision and Principles based overarching document to enable prioritisation and guide decision making ▪ Includes TBL and Council's Reporting Targets ▪ Embedded into Council Plan	▪ Outlining Council's approach to developing a sustainable organisation (managing and reducing resource use and impacts) ▪ Management tool (reporting and continuous improvement)	▪ Defining overall Natural Environment objectives and Council's roles/responsibilities; or links with other organisations/agencies for delivery of outcomes	▪ Assisting the community to live sustainably and adapt to changing environmental conditions ▪ Defining roles (especially Council's role)
Scope	▪ 5-6 pages ▪ Introduction and framework ▪ Sets the purpose of all other docs ▪ Rationale for Council's involvement: ▪ Benefits ▪ Future/current changes ▪ Links to 2030 Vision ▪ Principles (This Council believes that....)	▪ Internal operations and services focus ▪ Includes Principles and Framework from Sustainable Strategy ▪ Action Plan (organisation and unit level)	▪ ▪ Includes Principles and Framework from Sustainable Strategy ▪ Statement of importance to community (some definitions already eg MDBA lobbying) ▪ Objectives and Actions (linked to existing plans) ▪ Councils role	▪ Includes Principles and Framework from Sustainable Strategy ▪ What can Council do? ▪ What can individuals and groups do? ▪ What is Council's role in facilitating/enabling?

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	SUSTAINABILITY STRATEGY	CORPORATE SUSTAINABILITY STRATEGY	NATURAL ENVIRONMENT STRATEGY	COMMUNITY SUSTAINABILITY STRATEGY
Indicators & Targets	- Global Reporting Initiative (GRI) - Framework of indicators - Higher level TBL (linked to Council Plan)	- GRI indicators that relate to Corporate operations - Resource budget targets for H2O, gas, electricity, fuel, waste, consumables - Unit level targets (5 star Action Plan targets)	GRI Indicators	- GRI Indicators - Community led indicators (incl. 2030 Vision)
Links	2030 Plan - Council Plan	- Unit level plans and indicators - Resource budget bids - Build on/broaden from current financial resource targeting and indicator systems - NEGHA Risk and Adaptation Strategy	- Unit level plans - MSS and Planning Scheme - Plans eg. Roadside Plan; Reserve Plans - Hume Sustainable Communities Plan Regional Catchment Strategy - State Plans	- Unit level plans - Regional Climate Change Strategy (NEGHA) - Heatwave, Wellbeing Strategies, Community Action Plans - Citizens' Jury outputs - Planning mechanisms - Building Standards and Codes
Time Frame	January 2012	May 2012		
To be done	- Indicator Selection - Principles	- Resource budgets for 2012/13 - Ways to track/record/report resource use (linked to TechOne)		

NOTE: *Accord Resources to develop Sustainable Strategy and Corporate Sustainability Strategy plans are already in place.*

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Intended change over time

It is intended that sustainability will be understood, and embedded into both strategic and day to day operations of council.

The framework developed at the workshop allows for clear strategic and policy endorsement at Councillor level, and sets the tone for the development of strategies which have different audiences and different purposes. Measures specific to each documents' intent mean that there will be clear benchmarks and targets to enable progress to be monitored and measured.

The next stage of this process is for the framework to be shared and explained to all the senior managers at the Rural City of Wangaratta to get their understanding and buy-in, and then adoption of the framework and the overarching Sustainability Strategy by Council. Two of the four strategies have resources and timelines already associated with them, leaving the remaining strategies to be resourced and time lined.

Relationship to the Literature Review

The process undertaken for the Rural City of Wangaratta highlighted the need to identify a clear outline, process and framework for embedding sustainability that is:

- Owned at the highest level
- Clear about its intent, goals, targets and measures
- Cross sectional – but with a clear driver/leader (in this case, the environmental unit, and the Director of Sustainability as a key Corporate Management Team member)

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5.4 City of Wodonga – embedding sustainability into culture and operations

Purpose

The purpose of the workshop held at Wodonga City Council was to develop steps to embed sustainability into the culture and operations of the council.

Process

Ten officers, including senior directors, from across a number of council units were present for a discussion based workshop.

Workshop Outcomes

Through discussion, the group determined a rationale for embedding a culture of sustainability into 'everything we do' at Wodonga City Council:

- It has a positive flow on effect to the broader community
- We need to be leaders at this, and clearly demonstrate our leadership
- We may act catalyst to educate/develop the community

It was clearly stated that "only when this culture of sustainability is part our organisational identity, will we see results".

The meeting participants determined that they needed to:

- Explore 4-5 key indicators that can provide a benchmark to measure collective council effort
- Develop an action plan to put the indicators into place, develop regular monitoring, educate staff to build knowledge and awareness (leading to permanent cultural change) and communicate the success stories within council and to the community
- Ensure better linkages between current Strategic Plans

As a result of the meeting, an Action Plan was developed with responsibilities and timelines assigned. Responsibilities were assigned by senior officers who will follow through at Executive Level.

The measures/indicators and enabling actions were:

Measures / indicators	Actions
An overarching "e" index in place and changes tracked	• Develop rationale and process • Policy decision • Embed in Council reporting and budget and Council Plan
Measure energy and resource use, and diversion of Council waste (i.e. not to landfill)	• Map out a process for measuring • Audit / benchmark
ESD must be part of tenders and design specifications (including fee cycle costing affects procurement policies and tendering policies) [measure % compliance]	• Develop rationale and process • Policy decision • Implementation
Education and training for all staff to build a base level of knowledge and awareness (leading to permanent cultural change) % uptake hours / year / staff member (also offer additional training)	• Develop training plan for organisation regarding sustainability • Look at other Council examples • Build into annual reviews • Revamp "green team" / champions program and links to responsible managers (clear TOR etc) • Discussion at managers forum
Number of Council good news stories communicating sustainability works and outcomes – 1 story per month	• Discussion at managers forum so all contribute stories

Intended Change over Time

Council officers present at the meeting were keen to see a commitment to sustainability by council staff and councillors. They acknowledged that this support was present however, in the absence of standard measures, good information and consistent reporting, it was difficult to gauge whether progress is being made.

With the introduction of common goals, and common measures across all activities of council, it is intended that a culture of sustainability is embedded across all council activities.

Relationship to Literature Review

The Literature Review found that 'what gets measured, get's managed' and that clear goals established by cross functional teams (ie across the organisation) which are widely held and understood, are more likely to lead to successful outcomes in behavioural change and embedding sustainability.

Lessons Learnt

Several key lessons can be derived from the Stakeholder Behavioural Study and Analysis:

Process

- Projects like this can only be of use when they are 'owned' and there is a shared understanding of the purpose and the likely benefits for stakeholders. Considerable time was spent on this project to communicate the purpose of the entire NEGHA Adapting to a Low Water Future project before councils had a clear idea of how best to use the project to benefit them in identifying and overcoming behavioural barriers to implementing climate change adaption and sustainability practices and measures.

- Assumptions were made at the time of submitting for funding that the barriers and drivers for sustainability in local government were not well known, and would have to be derived with each of the key stakeholders. In fact, the Literature Review uncovered a considerable body of work that was relevant to the project's key stakeholders. This meant that the councils could learn from the literature, test the findings in situ, and develop practical projects that enable them to work on

Outcomes

- Immediate outcomes were to develop next steps for each organisation to embed sustainability. The intended changes and long term outcomes take time and effort. Behavioural change is about identifying issues and barriers, as well as determining appropriate solutions that are owned and understood. Each organisation needs time and space to identify the issues and barriers to change plus possible solutions. The time needed depends on the level of buy-in that already exists within the various councils. Some councils have gone a long way down the path, some haven't.

- Only time will tell if this project (Stakeholder Behavioural Study and Analysis) has had any long term impacts. It would appear that it has enabled each key stakeholder to examine a particular aspect of embedding sustainability into councils' planning and everyday actions.

- The development of case studies appropriate to each council should enable the sharing of approaches so that cross-organisational learning is enhanced.

- The literature review supports the methodology of this approach.

Complexity

- The complexity of embedding sustainability across all sections of council was apparent during the development and implementation of this project. There were many individual and organisational beliefs and attitudes to be worked through, and in particular, there was scepticism about the ability to practically implement the findings of several parts of the Adapting to a Low Water Future (resources at the ground level is of key concern).

- The complexity also relates to the 'wicked' nature of climate change. This extract is from an article http://productfour.wordpress.com/2010/11/12/wicked-teams-for-wicked-problems/ which well describes the experiences and lessons learnt

  To solve wicked problems (and climate change[1] is a wicked problem – the outcome or goal is not clearly defined):

  1. *We need to work as teams – not a set of people with similar job titles, but real, collaborative, mission-focused, process-oriented, esprit de corp (I'll-cover-your-backside-and-I-know-you've-got-mine teams)*

  2. *Work is learning is doing – we need people who DO as much as people who cogitate. Our society has lost most of its DO, but we're getting it back, and we need to accelerate the rise of the Do-er.*

  3. *Change is the norm – we must start to learn and work in a way that is extremely agile, deeply and broadly informed. Normal isn't normal anymore.*

- A further quotation about tackling wicked problems within the Australian Public Service (APS) is also applicable to this project:

  'Tackling wicked problems is an evolving art. They require thinking that is capable of grasping the big picture, including the interrelationships among the full range of causal factors underlying them. They often require broader, more collaborative and innovative approaches. This may result in the occasional failure or need for policy change or adjustment. Wicked problems highlight the fundamental importance of the APS building on the progress that has been made with working across organisational boundaries both within and outside the APS. The APS needs to continue to focus on effectively engaging stakeholders and citizens in understanding the relevant issues and in involving them in identifying possible solutions.'[2]

  This statement encapsulates the understanding developed during this NEGHA project - there is no simple solution but that it is a process of constantly engaging the councils and key stakeholders in dialogue and action regarding embedding sustainability into council strategies and plans.

  Councils won't always get it right but if they are supported, and offered resources ie facilitation/mentoring plus access to the latest research thinking and information, they will eventually evolve a process to embed sustainability that they can all share and learn from. The essential learning is that it is difficult for the councils to do it alone and unsupported without a driver bigger than the Shire/Council ie NEGHA alliance.

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[1] *Climate change* is a pressing and highly complex policy issue involving multiple causal factors and high levels of disagreement about the nature of the problem and the best way to tackle it. The motivation and behaviour of individuals is a key part of the solution as is the involvement of all levels of government and a wide range of non-government organisations (NGOs). http://www.apsc.gov.au/publications07/wickedproblems.pdf

[2] Taken from the foreword by Lynelle Briggs, Australian Public Service Commissioner, in the report http://www.apsc.gov.au/publications07/wickedproblems.pdf)

Recommendations

- 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.

- 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)

- 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.

Conclusion

The Stakeholders Behavioural Study and Analysis has worked with key stakeholders across the north east of Victoria to:

1. Develop an understanding of barriers and opportunities to embedding sustainability into day to day business including planning for sustainable outcomes and the implementation of the adaptation plan

2. Develop an understanding of awareness, perceptions, attitudes and behaviour at all levels of target organisations in relation to climate variability and the implications for sustainability

3. Investigate current practices, behaviour and perceptions within local agencies related to sustainability and the implementation of the adaptation plan

4. Provide the basis for moving to sustainability being a core part of each agency's strategic intent

In addition, the project identified the need to build a clear understanding and ownership of the intent, purpose and likely benefits of regional work undertaken by NEGHA in Adapting to a Low Water Future.

A Literature Review undertaken at the outset of the project identified clear drivers and barriers to embedding sustainability within organisations. Sharing the results of previous studies will councils enabled them to identify practical ways in which they could work to identify and overcome barriers specific to their own organisation.

A key message from the literature review, and borne out by the practical side of this project, is the need to start with the leaders of the councils first for them to gain understanding and commitment to the principles of embedding sustainability into council plans and strategies. Once this is established, cross organisational teams can be developed to tackle different aspects of sustainability and to develop strategy and actions to support implementation.

Case studies developed by the project outline work undertaken with each council to embed sustainability (using the above principles). Each council identified the need to develop clear targets and measures of sustainability that can be used to monitor progress and provide feedback to the organisation to continually drive learning and innovation.

The work undertaken in this Study is the beginning of identifying and overcoming behavioural barriers to embedding sustainability in organisations. It should provide a solid platform for future work in each of the stakeholder organisations.

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Appendix

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Summary of Literature Review findings:

This literature review has been undertaken to provide an initial understanding of potential drivers and barriers (including institutional and attitudinal) to embedding sustainability into organisations. It has been developed to frame subsequent consultations as part of the Stakeholders Behavioural Study and Analysis.

The review has covered key local government and water agency guiding documents including region wide strategies and plans of individual councils and agencies. The review has also considered a range of reports that have examined barriers for organisations in embedding sustainability into their everyday activities, and/or provide frameworks and methods for moving sustainability considerations into core operations of organisations. In addition the review considered a number of reports that have addressed the issue of barriers to climate change adaptation.

Regional Guiding Plans and Strategies clearly recognise and plan for the implications of, and adaptation to climate change.

The five councils of the study area (Alpine, Indigo, Towong, Wangaratta and Wodonga) have Council Plans that provide statements recognising the need for adaptation to climate change, and variously provide support strategies. The councils have identified further strategies and initiatives to be developed.

The literature review clearly identified relevant and practical studies specifically related to barriers and drivers of sustainability within local government. The table below summarises the key drivers and barriers identified.

Table 2: Key barriers and drivers to embedding sustainability in local government

Drivers	Barriers
Understanding of issues, and setting direction: what are we adapting to; who adapts; how do we adapt; what do we want to achieve	Lack of resources (financial and human)
Good organisational structures which mean that sustainability is clearly embedded, clear roles and responsibilities, and non-siloed approach (eg sustainability teams across the organisations)	Leadership – lack of clear understanding of vulnerability to climate variability/change
Clear goals and measures (what gets measured, gets managed)	Communication and information (language of sustainability, gap between theory and practice)
Dedicated staff (with senior management and councillor support) working within a sympathetic organisational culture	Deeply held values and beliefs

The **main drivers or enablers** to sustainability in local government were identified in various studies:

Institute for Sustainable Futures – Drivers to Sustainability in Local Government (2009) Pillora S, Blackburn N, Artist S

- General manager and senior management support
- Mayor and councillor leadership
- Media coverage of global and local issues
- Active and engaged communities
- Dedicated sustainability staff
- A sympathetic organisational culture
- Effective management systems
- External funding
- Supportive legislation and partnerships
- External agency support

Choices, Choices - Environmental and Sustainability Reporting in Local Government in Victoria (2011) Auty, K

- Organisational structures that *"embed sustainability within an organisation, to sustain sustainability efforts, and to facilitate the cultural and behavioural change necessary for success"* (p 24)

- The report suggests a number of specific organisational structures that can be established, or specific actions that can be taken, to facilitate sustainability, including:

    o establishing formal positions for sustainability with clearly defined roles and responsibilities, such as individual roles, teams, committees, or other groups;
    o providing teams or individuals with adequate power, authority and resources and ensure they have the appropriate technical and political skills;
    o establishing systems to build the knowledge and capacity of employees and to facilitate the sharing of knowledge and learning across an organisation.

- The report also finds that organisational structures, such as sustainability teams, have an important role in facilitating cultural change. (p. 14).

Adapting to Climate Change through local municipal planning: barriers and challenges (2011)
Measham T, Preston BL, Smith TF, Brooke C, Withycombe RG, Morrison C

- Identified internal and external barriers and challenges, but suggests the way forward is to:
- *First, to move beyond mitigation to include a focus on adaptation in practical terms;*

- *Second, to push for reform at higher levels of government to enable changes in the planning frameworks which currently hinder local adaptation;*

- *Third, to embed climate adaptation into a wider range of council functions. (p. 21).*

The literature review also clearly identified **challenges and barriers:**

Institute for Sustainable Futures – Drivers to Sustainability in Local Government (2009) Pillora S, Blackburn N, Artist S

The main barriers were:

- Lack of organisational support
- The gap between sustainability theory and practice
- Inadequate systems for managing information
- Competing priorities
- Availability of internal and external funding
- Limited staff capacity and high turnover
- Research and development challenges
- The language of sustainability
- Dealing with other government agencies
- Limitations of legislation in relation to sustainability provisions

Choices, Choices - Environmental and Sustainability Reporting in Local Government in Victoria (2011) Auty, K

Victorian councils were surveyed about their challenges they faced in implementing sustainability actions and embedding it into the organisation. Wangaratta, Wodonga and Towong Councils were part of the study. Councils said they faced:

- Lack of resources   78%
- Paucity (lack) of staff   74%
- Lack of knowledge/expertise 48%
- Limited community demand   33%

In addition to the point regarding lack of resources the additional costs and the task of data collection was also an issue for councils, as was the reliability of any data collected. (p. 21)

Adapting to Climate Change through local municipal planning: barriers and challenges (2011) Measham T, Preston BL, Smith TF, Brooke C, Withycombe RG, Morrison C

The study found the main limitations to climate change adaptation in local government planning were:

- Lack of resources
- Inadequate information
- Institutional limitations
- Culture of reactive management (p5)

The internal institutional limitations were primarily about where climate change responses were assigned within councils:

'The most acute internal limitation, noted across each of the three case study councils, was a strong tendency to assign climate adaptation (along with mitigation) to the environment section of the council. This stems from a legacy of thinking of climate change as an environmental issue.

The challenge for local government is to recognise climate adaptation as a cross-sectoral issue'. (p. 17)

They go on to say:

'Institutional 'silos' are a historic problem, and climate adaptation is a renewed reason to address the challenge of cross-sectoral integration within councils (p. 17)

A Framework to Diagnose Barriers to Climate Change Adaptation (2010) Moser SC, Ekstrom JA

"Cross cutting barriers" identified were:

- Leadership
- Resources
- Communication and information
- Deeply held values and beliefs

As a result of the literature review, the consulting team developed the summary table and drew the following conclusions:

- **Leadership** from the top of the organisation is essential for developing the understanding climate change within the organisation and getting a commitment to embedding it through local government strategic and operational plans *(Auty, K 2011; Pillora S, Blackburn N, Artist S 2009).*

- **Understanding of, and commitment to sustainability** is linked to the ownership by leaders within local government *(Measham T, et al 2011).* Local government organisations require from the councillors and senior managers to develop and implement plans as they are the people with sufficient power and resources to be enable the drivers (eg allocation of necessary resources, and setting up cross organisational structures that support embedding sustainability that have goals and measures). It is very difficult for other individuals within these organisations to overcome the barriers as they generally lack the resources and power to do much other than work within the confines of their work groups and sections.

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- **Communication and sound information:** information needs to be shared initially from the organisational leaders to create clear understanding of the vulnerabilities to climate change variability holistically ie across the whole local government area and all sectors, to create a common level of understanding. This will enable an integrated approach to be taken and enable the organisation to continually learn and innovate as it applies the theory and develop an understanding of the language of sustainability. (*Auty K, 2011; Moser SC, Ekstrom J 2010*)

- Adaptation to climate change requires of **whole of organisation response**

A key message is to start with the leaders of the councils first for them to gain understanding and commitment to the principles of embedding sustainability into council plans and strategies. Once this is established, cross organisational teams can be developed to tackle different aspects of sustainability and to develop strategy and actions to support implementation.

Implicit in this process is the need for measures of sustainability that can be used to monitor progress and provide feedback to the organisation to continually drive learning and innovation. Involvement of business and community members is also implicit to enable them to bring in their ideas and knowledge to inform the processes. It is not expected that councils will get this process right all the time but instead will learn through trial and error what is practicable and workable.

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1. Introduction

The Regional Development Company (RDC) and Fishbowl PR in conjunction with Marsden Jacobs Associates have been engaged by the North East Greenhouse Alliance (NEGHA) to undertake an analysis of the drivers and barriers for key stakeholders in the North East region to implementing critical actions for adapting to climate change, and to make recommendations to overcome those barriers. The analysis, referred to as the *Stakeholders Behavioural Study and Analysis*, is part of the *North East Victoria Adapting to a Low Water Future* project.

The agreed objectives for the *Stakeholders Behavioural Study and Analysis* are:

1. Develop an understanding of barriers and opportunities to embedding sustainability into day to day business including planning for sustainable outcomes and the implementation of the adaptation plan
2. Develop an understanding of awareness, perceptions, attitudes and behaviour at all levels of target organisations in relation to climate variability and the implications for sustainability
3. Investigate current practices, behaviour and perceptions within local agencies related to sustainability and the implementation of the adaptation plan
4. Provide the basis for moving to sustainability being a core part of each agency's strategic intent

This literature review has been undertaken to provide an initial understanding of potential drivers and barriers (including institutional and attitudinal), thereby helping to frame the subsequent consultations as part of the Stakeholders Behavioural Study and Analysis.

The review has covered key local government and water agency guiding documents including region wide strategies and plans of individual councils and agencies. The reviews has also considered a range of reports that have examined barriers for organisations in embedding sustainability into their everyday activities and/or provide frameworks and methods for moving sustainability considerations into their core operations. In addition the review considered a number of reports that have addressed the issue of barriers to climate change adaptation.

The following documents were reviewed, with full details in Appendix One:

- The Hume Strategy for Sustainable Communities 2010 – 2020
- Alpine Shire Council – Council Plan 2009 – 2013: 2010 Update
- Indigo Shire Council – Council Plan 2009 – 2013: 2010 Update*
- Towong Shire Council – Council Plan 2009 – 2013: 2010 Update
- Rural City of Wangaratta – Council Plan 2009 – 2013*
- City of Wodonga – Council Plan 2009 – 2013*
- North East Water – Corporate Plan 2010 - 2011
- Goulburn-Murray Water – Corporate Plan 2010/11 – 2015/15
- North East Victoria - Adapting to a low water future: Phase 3: Revision of Existing Council Plans and Strategies – draft

- North East Victoria - Adapting to a low water future: Climate Change Risk Assessment and Adaptation Plan - draft

- Background to Environmental Assessment Tool

- Environmental Assessment Tool

- Environmental Assessment Tool – Lessons Learnt

- Choices, Choices - Environmental and Sustainability Reporting in Local Government in Victoria

- Institute for Sustainable Futures – Drivers to Sustainability in Local Government

- Barriers to Sustainability in Organisations

- Community Based Social Marketing

- New Indicators of Vulnerability and Adaptive Capacity

- Framing Vulnerability and Adaptive Capacity Assessment

- Adapting to Climate Change through local municipal planning: barriers and challenges

- ICLEI - Cities for Climate Protection Australia

- Adaptation Initiative Local Government Climate Change Adaptation Toolkit

- A Framework to Diagnose Barriers to Climate Change Adaptation

This report contains the following sections:

8. Introduction

9. Regional Guiding Strategies and Plans

10. Methods and Barriers to Sustainable Practices

11. Conclusions and Questions

12. References

2. Regional Guiding Strategies and Plans

2.1 The Hume Strategy for Sustainable Communities

The Hume Strategy was finalised in 2010 and is the integrated strategic plan for the whole of the Hume Region. It provides a framework for long-term co-operation and investment within the region.

The significance of the Hume Strategy is that it was resourced by multiple funding sources and developed over two years through the Hume Regional Management Forum (RMF). The RMF is made up of the heads of government agencies and local government Mayors and CEOs from the region. This high level involvement in the preparation and support for the final strategy establishes the strategy as the overarching guide for all future planning and decisions in the Hume Region.

The Hume Regional Plan (the Plan) lists a range of environmental challenges for the region but clearly states that 'one of the most challenging issues facing the region is climate change' (p. 18, Hume Regional Plan). It also acknowledges the social, economic and environmental impacts of failing to deal with climate change.

Part 2 of the Plan – A Regional Framework for Action - outlines four key directions to help achieve the environmental goal. The first direction is *'Anticipating and adapting to the effects of climate change'*. This states that the Hume Region will develop a comprehensive and integrated regional approach to tackle the effects of climate change (p. 25, Hume Region Plan). It says this approach will be underpinned by knowledge and science and use integrated and multi-disciplinary approaches that focus on the links between agriculture, land use planning, housing, industry, health and natural resource management.

This key direction also acknowledges adaptation as the '*primary means of dealing with the unavoidable impacts of climate change*' (p. 25, Hume Region Plan). It says the Region will pursue resources to support research into climate change risks and impacts for the region.
The table in Appendix 1 – List of Regional Actions (p. 60, Hume Region Plan) thoroughly details a range of actions for each priority strategy.

2.2   *Northern Region Sustainable Water Strategy*

The Northern Region Sustainable Water Strategy (NRSWS) aims to achieve long-term water resource planning in the Northern Region by guiding the development, integration and implementation of water management plans prepared by water corporations and catchment management authorities operating within the region.
The NRSWS considers all sources and uses of water including the needs of towns, industry, agriculture and the environment.

2.3   *North East Water Corporate Plan*

In addition to delivering on its core business, NEW's plan contains two key initiatives which will position it as an environmental champion – as per the organisational vision:

Deliver exceptional water services, be an environmental champion, and encourage regional growth.

These initiatives involve the completion of the One Resource Strategy and achieving a zero net carbon status for the organisation.

'*The One Resource Strategy project will consider water resources from across the water cycle including surface and ground water, rainfall, storm water and reclaimed wastewater water. It will identify and evaluate opportunities for the delivery of water that is fit-for-purpose to enhance customer choice and improve service delivery, assisting customers in meeting their broad water-use expectations.*

A key element in the project will be the assessment of the legislative and social challenges in delivering water services in this manner, and identification of options to resolve them.'[3]
In 2009-2010 the organisation asked the question: "Can we be greenhouse free for Water Plan 3?" In response the organisation has formed a project team representing each business unit within the organisation and has enabled the Corporation to understand the magnitude of the challenge in pursuing a target of zero net greenhouse emissions from its activities.

This process has identified the key issues to be addressed in order to meet the target.
NEW's Corporate Plan also refers to '*embedding sustainability principles into our operations and infrastructure management activities through the Corporation's Project Management System*'.

Again, it would be informative for this study to discuss how NEW is monitoring and reporting on this.

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[3] (NEW Corporate Plan, p. 10)

2.4   *Goulburn Murray Water Corporate Plan*

GMW recognises environmental and climate change as among the significant challenges facing its key customer group of more than 30,000 agribusiness operators. A core value of GMW is *"sustainability of the environment, business and community"*.

In its Corporate Plan (2010/11 – 2014/15), there is an acknowledgment that Goulburn-Murray Water's operating environment is changing and new business challenges are continuing to emerge and this has highlighted the need for Goulburn-Murray Water to quickly make changes to its strategic direction and business priorities in order to prepare for the future.

In response to these changing business needs, Goulburn-Murray Water has defined four Key Strategic Change Priorities that will *"transform Goulburn-Murray Water and best position the business to meet evolving customer needs and climate scenarios, while allowing government policy, market forces and individual choice to shape commercial outcomes."*

The four Key Strategic Change Priorities are:

Modernisation
A focus on modernisation of the irrigation area supply network through NVIRP and delivering the maximum benefits to customers of this modernised network through enhancements to services, business processes and asset management strategies.

Pricing
A focus on pricing and tariff structures to ensure tariffs meet future business and customer needs and pricing demonstrates value for money.

People and Technology
A focus the organisational capability, business systems and technologies that will be needed to respond to the future.

New Business Model
A focus on operating a new business model founded on core competencies and simplified customer and community engagement arrangements to drive higher levels of organisational performance

More consultation with Goulburn Murray Water is required to ascertain the way in which they are responding to sustainability and adaptation responses, and any behaviours and barriers directly relating to this study.

2.5 *North East Catchment Management Authority – Program for Change strategy*

NECMA has provided information about their Program for Change Strategy, based on their involvement with the ResourceSmart Program facilitated by Sustainability Victoria, and the ways in which they plan to meet government commitments specified in the Victorian Government's Our Environment, Our Future - Sustainability Action Statement.

As stated in the supplied document, the strategy is linked to NECMA's environment policy. This policy aims to enable to North East CMA to comply with all environmental legislation and requirements, reduce its carbon footprint from its offices, depots and operational activities and to continually improve environmental performance through maintaining, reviewing and implementing the North East CMA"s Integrated Management System (IMS).

The North East CMA has targeted the following reductions based on 2007/08 baseline data:

- Reduce its greenhouse gas emissions from our office based operations by 5%.

- Reduce waste to landfill generation by 10%

- Increase our recycling rate from our offices to 50%

- Reduce water consumption from our Footmark Crt and Birallee offices by 10%

- Reduce energy consumption from our key activities by 5%

Action Plans are provided within the Strategy to cover:

Organisational Impacts: sustainability in our core business

Management and communications: walk the talk and tell others

Education and training: teach others to think and act ResourceSmart

Waste: reduce, reuse and recycle

Energy: switch off, save energy and cut greenhouse gases

Transport: travel smart for a healthy environment

Water: save water, harvest and recycle

Purchasing choices: think ResourceSmart before purchasing

Operational activities: sustainability in action

Biodiversity and water quality: caring for our local environment

Planning and infrastructure: plan for sustainability and build ResourceSmart.

3. Council Plans

The council plans of the five municipalities involved in this study: Alpine, Indigo, Towong, Wangaratta and Wodonga were reviewed. A consistent feature of the plans is that they all refer to environmental and sustainability initiatives. Likewise they all use Key Performance Indicators to measure their achievements against their outlined plans. However, there are few KPI's for the environmental components of their plans, as they relate to the objectives of this study.

The following section discusses specific aspects of the council plans that relate to this study.

3.1 City of Wodonga

The City of Wodonga's Council Plan has two Strategic Objectives which are relevant to this study. The first talks about encouraging the business community to operate in '*a socially and environmentally sensitive manner*' and lists four priorities and actions to achieve this. There is no Key Performance Indicator listed that relates specifically to this objective.

The second Strategic Objective is being 'A *city leading by example in environmental efficiency issues and considering environmental impacts in all decision making*'. The Council Plan lists many priorities and actions but no Key Performance Indicators which focus on 'considering the environmental impact in all decision making'.

3.2 Towong Shire Council

Towong Shire's Council Plan refers not only to 'integrating sustainable natural resource management into all of our business activities' but specifically mentions sustainable practices in agribusiness and residential development.

The plan highlights that Council will integrate this sustainable approach by a '*focus on day to day activities by increasing staff and community environmental awareness and integrating environmental management into Shire activities where possible*'.

There is no definition in the Plan regarding how this will be measured. Towong Shire in conjunction with Alpine Shire and the NEGHA commissioned a report for Climate Change Risk Assessment and Adaptation Planning in May 2010.

3.3 Indigo Shire Council

Indigo Shire Council has a department of Sustainable Communities which is committed to dealing with sustainability issues. In addition to initiatives shared by other councils in the area, such as being a member of the NEGHA, having a Greenhouse Action Plan, introducing more fuel-efficient cars etc, Indigo has introduced an annual Sustainability Awards program to focus on community initiatives in this regard.

The Plan also says Council will '*develop and adopt sustainability principles for application across Council operations*' and that they will '*ensure key sustainability principles are incorporated across all Council activities*'. These two objectives are of major interest to this study and it will be informative to learn more about how Council is approaching these two tasks.

Council also says it will '*recognise and plan for the effects of changing environmental conditions*' but does not give further detail.

3.4   The Rural City of Wangaratta

The Rural City of Wangaratta aims to establish Council leadership as a sustainability and environment steward.
The Plan contains several initiatives relating to this aim:

1. Develop and apply a triple bottom line approach to the assessment of new initiatives.

2. Undertake a strategic approach to land use planning to provide balanced outcomes for growth, existing land use, environment, heritage and community aspirations.

3. Prepare for a carbon constrained economy through developing greenhouse friendly economic initiatives and capitalising on related opportunities.

4. Reduce impact of Council's activities and provide leadership in sustainability by demonstrating best practice

5. Advocate to increase sustainable standards in state planning and building provisions

The only apparent measures for these fall into existing categories of the annual Community Satisfaction Survey under such headings as community engagement and advocacy.

3.5   Alpine Shire Council

The Alpine Shire Council is developing an implementation plan to meet the challenges of sustainability and this will be completed shortly (June 2011). At the same time, Council is developing an Environment Policy from which will flow an Environment Strategy in June 2012.

Alpine's Council Plan also commits the Council to annual audits of its energy use for comparison to the targets set in other plans. This is one example of monitoring and measuring.

Council also says it will develop and implement a climate change risk assessment process by June 2011 following the commissioning of a report with Towong Shire and the NEGHA on a report for Climate Change Risk Assessment and Adaptation Planning in May 2010. It would be useful to discuss the nature of this process and how it is being developed to inform this study.

3.6 Other Council climate change documents

3.6.1 Alpine Shire Council - Local Voices Shaping Our Future - How can we work together to respond to a varying climate? Action Plan

The aim of the Local Voices Shaping Our Future project was to build capacity in Council and the community to work together to respond more effectively to the challenge of a varying climate.

In June 2010, Council convened the Local Voices Shaping Our Future citizens' jury. Sixteen community members from across the Shire deliberated for two days over the charge 'How can we work together to respond to a varying climate'. These community members represented a range of ages and other demographics.

The Action Plan outlines how Council will respond to the recommendations made by the citizens' jury.

In part, the citizens' jury called on Council not to be afraid to lead, and to be brave in doing so.

The citizens' jury covered a broad range of issues and made recommendations on the following topics:

- *Education and communication*
- *Water*
- *Energy*
- *Sustainable design*
- *Marketing*
- *Community action*
- *Industry*
- *Leadership*
- *Transport*
- *Disaster management*
- *Rate related*
- *Recycling and waste*
- *Health*

Council's action plan allocates tasks to be delivered over the next two financial years.

3.6.2 North East Green House Alliance – Report for Climate Change Risk Assessment and Adaptation Planning – Alpine Shire and Towong Shire, May 2010

Initial work identified the following as the most relevant climate change risks for the two municipalities :

- Reduced average rainfall
- Increased average temperature
- Increased frequency of extreme events (flood, bushfires, heatwaves)

The project identified 21 risks, of which 7 were considered High in 2009 and without the introduction of additional or more effective controls were expected to grow to 1 Very High and 15 High risks by 2030.

The seven High risks are:

- Bushfire impacting on community health and wellbeing
- Bushfire impacting on local economies (including tourism) and growth
- Bushfire creating stress on Council resources, budgets and service delivery
- Damage to Council infrastructure and private property as a result of flooding
- Erosion and siltation impacting on service delivery
- Environmental impacts due to erosion and siltation affecting the local environment
- Proliferation of weeds and pets in the local environment as a result of the increased temperature.

Potential controls for each of the risks were then analysed and prioritised.

They were then classified as either direct – where Councils have direct responsibility or capacity to implement controls or, indirect – where councis can only influence.

Almost 50% of the controls relate to incorporating climate change risks and impacts into existing Council plans. This planning activity is about ensuring various management plans administered by the Councils adequately incorporate the controls and ensure resourcing is provided to implement the controls.

The report recommended that both Councils do the following internally:

1. Formally recognise the need to manage climate change risks across council processes and operations and develop and official position on climate change and the need for adaptation
2. Develop more detailed, prioritised and integrated action plans.
3. Develop a full list of local indicators for all the climate change risks identified, allowing Council to monitor local indicators.

4. Develop and individual Council Climate Change Adaptation Action Plan which may be part of existing sustainability or planning documentation and is periodically reviewed.

Externally, the report recommends the Councils communicate an official position on climate change with the community, be involved in education and engagement with the community on climate change, work with other agencies to develop agreed responses (such as NEW, CMA, Parks Victoria) and liaise with the Victorian and Australian governments and local government associations to work toward the development of appropriate policies, programs and funding for this work.

The report states that the controls identified fall largely into four areas:

- Council's own management plans and policies
- Engineering or physical controls
- Community engagement and awareness programs and
- Liaising with and lobbying government.

The integration of this work within each Council's operations was outside the scope of the project but it is noted that it is critical that this 'becomes part of how councils do business.'

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4. Reports from previous stages of the Adapting to a Low Water Future project

4.1 Revision of existing council plans and strategies

This report largely focused on the eight priority groupings of risks that were identified as extreme or high risk in the Risk Assessment and Adaptation Planning phase of the project, and looked at council documentation in this regard. The eight groups are: surface water supply and quality; groundwater supply and quality; stormwater and flood management; policy and planning; economic development; recreation and amenity; emergency services and environment.

While it made a raft of recommendations, predominantly they were water management and flooding specific. However, many cross over into the area of how organisations deal with policy and planning organisation-wide.

The key recommendations that relate to this behavioural study are that:

1. Councils identify opportunities to identify what skills and resources are needed within the organisations to increase the capacity and resilience of staff and councillors to manage during rapid change.

2. Councils, wherever possible, include an administrative loading into funding submissions.

3. Councils consider jointly funding a fund raising position to expand the sources of funding of councils and municipalities.

4. All reports going to Council seeking endorsement or approval, should include a statement from officers covering how they and/or the consultants addressed the issue of climate change risk and opportunity.

5. Methods and Barriers to Sustainable Practices

5.1 Environmental Assessment Tool (EAT)

This project was undertaken for Regional Development Victoria in 2010. The aim of this project was to *"... reduce complexity and confusion concerning how to integrate sustainability into decisions around planning, and act as a clear prompt to decision-makers; and create a product which could prioritise sustainability and climate change at the initial stage of decision making so that there is a greater chance of integration, rather than the more usual and limiting circumstance of "11th hour inclusion" of sustainability concerns. "*
The study found that there is a business case to ensure that decisions do take into account these considerations.

The study looked at a range of tools already in existence and analysed them. Of particular interest was The Institute of Sustainable Futures at the University of Technology Sydney's (UTS) "Sustainability Tool Selector: A Guide for Local Government"[4] in 2009. This report included case studies of a number of councils in NSW who had used these tools and comments on the applicability, costs and usability of the different approaches.

The tools were assessed for their ability to affect decision making, developing performance indicators, tracking progress at an organisational level, tracking progress at a program level and for evaluation and review.
Local examples were assessed (from Moreland and Port Phillip councils) and the International Council for Local Environmental Initiatives (ICLEI) tools for local councils in relation to climate change and adaptation were also covered. Some of the five municipalities in this study have an association with the ICLEI program.
More recently, ICLEI has launched the Adaptive and Resilient Communities (ARC) program. The handbook outlines a tool for Councils to work through adaptation for climate change.

A recommendation included in the EAT report, but dating back to a 2003 evaluation[5] for the North East Local Government Forum is also of interest to this study:

"It is strongly recommended that Local Government continue to identify projects in consultation with the community. Assessment of projects based on the TBL process should form the minimum evaluation of projects by local government before the Local Government Forum considers them. .."[6]

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[4] Pillora S, and Blackburn N, <u>Sustainability Tool Selector: A Guide for Local Government</u>, prepared for the Urban Sustainability Support Alliance by the Institute of Sustainable Futures, University of Technology, Sydney. 2009

[5] MacroPlan Australia in conjunction with The Regional Development Company, <u>North East Regional Plan. Establishing a North East Regional Planning and Project Evaluation Process.</u> Prepared for the North East Local Government Forum. December 2003
[6] MacroPlan Australia, *ibid.*, p28

5.1.1 EAT – Lessons Learnt

This report identified that there is considerable confusion about how sustainability and climate change issues can be addressed at the front end of projects and planning.

The findings of the report have some suggestions for local government.

   a. Encourage rural municipalities to trial and possibly incorporate existing design scorecards into developments

   b. Encourage municipalities to review terms of Economic Development Units to explicitly address environment sustainability where not already done so.

The report also states that the Municipal Association of Victoria (MAV) is about to release a series of tools for local government in relation to sustainability. RDC will look out for the release of these and analyse their usefulness for this project at that time.

Both the City of Port Phillip's Sustainable Design Scorecard (non-residential) and the City of Moreland's STEP program (residential developments) are being used in a number of metropolitan municipalities to improve the sustainability of design and planning. To date, no rural municipalities are using these tools. The report suggests that RDV may add value by encouraging rural municipalities to trial and adapt these or other tools.

5.2 Choices Choices: Environmental and Sustainability Reporting in Local Government in Victoria

This report, completed in April 2011 considers the purpose, importance and types of environmental sustainability reporting.

It gives a comprehensive summary of sustainability reporting and considers findings from two case studies: one Victorian and one from the UK.

> *"The role of sustainability reporting in enabling an organisation to continually learn and innovate is clear – learning can only occur if the effectiveness of actions are measured and evaluated and disclosed to create a learning feedback loop. It is often said 'you can't manage what you can't measure', or to put it another way, 'what get's measured gets managed', and ultimately sustainability reporting should be used to generate learning and improve decision making, and in turn, change behaviour. (p.7)*

The report also considers the organisational structures necessary to support such reporting. The report says that organisational structures

> *'Assist to embed sustainability within an organisation, to sustain sustainability efforts, and to facilitate the cultural and behavioural change necessary for success'* (p. 14).

This provides good direction to this study where one of the objectives is regarding barriers and opportunities to embedding sustainability within an organisation.

The report suggests a number of specific organisational structures that can be established, or specific actions that can be taken, to facilitate sustainability, including:

- establishing formal positions for sustainability with clearly defined roles and responsibilities, such as individual roles, teams, committees, or other groups;

- providing teams or individuals with adequate power, authority and resources and ensure they have the appropriate technical and political skills;

- establishing systems to build the knowledge and capacity of employees and to facilitate the sharing of knowledge and learning across an organisation.

The report finds that organisational structures, such as sustainability teams, have an important role in facilitating cultural change. (p. 14).

Another key benefit for this study is that as part of preparing this report, the Office of the Commissioner for Environmental Sustainability carried out research with Victorian councils. Wangaratta, Wodonga and Towong, from this study, took part.
One of the insights for this study was the data on the challenges councils said they faced in this area:

5.	Lack of resources	78%
6.	Paucity (lack) of staff	74%
7.	Lack of knowledge/expertise	48%
8.	Limited community demand	33%

In addition to the point regarding lack of resources the additional costs and the task of data collection was also an issue for councils, as was the reliability of any data collected. (p. 21)

Those involved in the research did comment that a set of common environmental indicators was a potential means for councils to benchmark environmental performance against other councils.

5.3 Barriers and Drivers to Sustainability in Local Government - Institute for Sustainable Futures (ISF)

This report from 2009 about Barriers and Drivers to Sustainability in Local Government documents the research undertaken for the Urban Sustainability Support Alliance and covered:

- The main drivers and barriers in relation to achieving sustainability in Local Government experienced by council staff

- The tools and approaches being used by NSW councils to measure progress towards sustainability; and

- A summary of evaluation frameworks and tools used more broadly in Australia and overseas.

5.3.1   Findings on drivers and barriers

The main drivers and enablers identified in the ISF report were: general manager and senior management support, mayor and councillor leadership, media coverage of global and local issues, active and engaged communities, dedicated sustainability staff, a sympathetic organisational culture, effective management systems, external funding, supportive legislation and partnerships, and external agency support.

The main barriers identified were: lack of organisational support, the gap between sustainability theory and practice, inadequate systems for managing information, competing priorities, availability of internal and external funding, limited staff capacity and high turnover, research and development challenges, the language of sustainability, dealing with other government agencies, and limitations of legislation in relation to sustainability provisions.

Barriers relating to size and geographic location, particularly for small, isolated councils, emerged as a major theme.

5.3.2   Findings on support requested by councils

Participants requested support with specific aspects of training, skills development and information provision, and provided suggestions for case studies, templates and evaluation tools.

Assistance was requested with mentoring, benchmarking, accessing funding resources and advocacy around policy issues. The value of resource and information sharing between councils, and assistance with opportunities for networking, also featured in the responses.

5.3.3   Findings on tools being used for evaluation and measuring progress

In providing information on tools for evaluation and for measuring progress towards sustainability, participants referred to corporate frameworks and tools as well as specific tools for evaluating the sustainability performance of their organisation.

They also provided feedback on environmental and sustainability reporting, the use of indicators for reporting progress, tools for evaluating projects and programs and tools for assisting with decision making.

Most participating councils face significant challenges with evaluation and measuring progress towards sustainability, and report that it is an area where they would welcome assistance.

5.3.4 Barriers to Sustainability in Organisations

This report looked investigated barriers to implementing sustainability in large retail organisations.

The questions used may provide guidance for the framing of questions for this study, in conjunction with other research studied.

5.4 Community Based Social Marketing

Social marketing is the systematic application of marketing, along with other concepts and techniques, to achieve specific behavioural goals for a social good.

A variation of social marketing has emerged as a systematic way to foster more sustainable behaviour. Referred to as Community-Based Social Marketing (CBSM) by Canadian environmental psychologist Doug McKenzie-Mohr, CBSM strives to change the behaviour of communities and organisations to reduce their impact on the environment.

Realising that simply providing information is usually not sufficient to initiate behaviour change, CBSM uses tools and findings from social psychology to discover the perceived barriers to behaviour change and ways of overcoming these barriers.

Among the tools and techniques used by CBSM are focus groups and surveys (to discover barriers) and commitments, prompts, social norms, social diffusion, feedback and incentives (to change behaviour).

The tools of CBSM have been used to foster sustainable behaviour in many areas, including energy conservation, environmental regulation and recycling.

Doug McKenzie-Mohr's approach is based on the selection of a behaviour that one is trying to understand or influence. This is done by firstly uncovering the barriers to changing the behaviour and understanding the benefits the group and/or individuals see they get from the existing behaviour. This is done through discussion with the groups of individuals involved.

McKenzie-Mohr recommends breaking behaviour down into the activities which comprise it and seeking barriers at each activity level. Then these are rated by priority and benefits in order to determine where effort is best invested for significant outcomes. He also espouses the need to consider motivation levels as a barrier.

His approach involves a focus on 'social diffusion' which is achieved by targeting the person or persons who are most well respected in the particular community about the topic. He recommends one then seeks the support of this person or persons to help deliver the message or behavioural change program.

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5.5 Barriers to climate change adaptation

5.5.1 New indicators of vulnerability and adaptive capacity – (The Tyndall Centre for Climate Change Research)

This report may assist with the identified 'high level of confusion' around addressing climate change noted in previously reviewed documents.

The authors of the report talk about developing 'a conceptual framework enabling researchers to relate the concepts of vulnerability, risk and adaptive capacity to one another' and predict that this should reduce the current high level of confusion and the general lack of communication between those working in the fields of climate change and natural hazards and disaster management.

The report introduces the concept of vulnerability in a climate change context by saying:

> *The vulnerability-led approach examines the underlying socio-economic and institutional factors, and, to a lesser extent, political and cultural factors, that determine how people respond to and cope with climate hazards. (p. 6)*

The CSIRO report which follows, also considers vulnerability in a climate change context.

5.5.2 Framing vulnerability and adaptive capacity assessment (CSIRO)

This report introduces the concept of an 'adaptation bottleneck'.
It cites Preston et al. 2008 who say

> *'In many instances, institutions lack clear understanding of their own vulnerability to climate variability in the present day (Preston et al., 2008). This reflects an adaptation 'bottleneck' – the challenge of moving beyond acknowledgement of a changing climate in a general sense into the implementation of context-specific adaptation policies and measures that can have an appreciable influence on vulnerability (Burton et al., 2002; Næss et al., 2007; Vogel et al., 2007)'. (p. 8)*

It finds that there are four core approaches to adaptation facilitation:

> **'1. Incentive/stimulus (or what are we adapting to?)** *– The pursuit of adaptation must be a response to some stimulus or incentive. This might be as simple as a general public awareness that climate change is occurring and therefore may pose consequences. What institutions adapt to will vary significantly depending upon the impact as well as the institution and the scale at which it is operating.*
>
> **2. Agent (or who adapts?)** *– For any given adaptation measure one or more individuals or institutions will be responsible for making a decision regarding the selection of the adaptation and overseeing its implementation (although within ecological systems, the adaptation may obviously not be a matter of policy but instinct). The relevant agent(s) will be determined by the system*

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itself, its internal processes and characteristics, its external relationships with other systems and its governance structure (Smit et al., 1999; 2000).

3. ***Capability/entitlement (or how do we adapt?)*** *– Agents must draw from a broad array of capabilities to initiate and implement and adaptation.*

4. ***Goal (or what do we want to achieve?)*** *– Adaptation cannot be successfully pursued in a policy vacuum. Some management goal, be it generic or specific, must be identified that guides the selection of adaptation strategies and the criteria for assessing their efficacy. Such management goals should be included in any assessment process, either implicitly as an underpinning consideration or explicitly as a component of a modelling or simulation process.' (p. 19)*

The report goes on to highlight the key challenges in developing an adaptation decision framework for Australia and lists the lack of shared understanding of concepts among those challenges.

5.5.3 Adapting to climate change through local municipal planning: barriers and challenges (Measham T. G et al)

This study found that the main limitations to climate change adaptation in local government planning were once again, inadequate information and lack of resources, but also institutional limitations and a culture of reactive management. (p. 5)

In exploring the institutional limitations further it found two main categories: those relating to internal arrangements and those relating to other levels of government. The internal limitations are informative for this study.

'*The most acute internal limitation, noted across each of the three case study councils, was a strong tendency to assign climate adaptation (along with mitigation) to the environment section of the council. This stems from a legacy of thinking of climate change as an environmental issue.*

The challenge for local government is to recognise climate adaptation as a cross-sectoral issue'. (p. 17)

They go on to say:

'*Institutional 'silos' are a historic problem, and climate adaptation is a renewed reason to address the challenge of cross-sectoral integration within councils (Critchley and Scott 2005). (p. 17)*

In regards to the limitations of dealing with other levels of government this study calls on further lobbying work in this area.

In summary, the study suggests the way forward is to:

First, to move beyond mitigation to include a focus on adaptation in practical terms; second, to push for reform at higher levels of government to enable changes in the planning frameworks which currently hinder local adaptation; and third, to embed climate adaptation into a wider range of council functions. (p. 21).

5.5.4 A Framework to Diagnose Barriers to Climate Change Adaptation

This article presents a systematic framework to identify barriers that may impede the process of adaptation of climate change.

The article frames the scope and scale of adaptation to climate change in three areas:

Coping measures: **s**hort term responses to deal with projected climate change impacts and return to status quo (less effort typically, and short to medium term goals)

More substantial adjustments change in some aspects of system without complete transformation (increased effort required, longer timeframes, medium to long term goal)

System transformation (including paradigm shift)   Much more time and effort typically required and a much longer term goal

The authors also describe phases and sub-processes through the adaptation process:

Understanding involves the stages of:
- (i)   problem detection and awareness raising (resulting in an initial problem framing);
- (ii)   information gathering and use to deepen problem understanding; and
- (iii)   problem (re)definition (resulting in a framing that does or does not warrant further attention to the issue).

Planning involves

- (iv)   development of adaptation options;
- (v)   assessment of options; and
- (vi)   (vi) selection of option(s)

Management phase involves
- (vii)   implementation of the selected option(s);
- (viii) monitoring the environment and outcome of the realised option(s); and
- (ix)   evaluation.

The article describes common barriers in each of these phases. *"Cross-cutting"* barriers are identified as leadership, resources, communication and information, and deeply held values and beliefs.

6. Conclusion and Questions

The review of literature suggests that the stakeholder behavioural study is timely.

On the one hand, the Hume Strategy indicates that there is a strong commitment at the regional level to pursuing sustainability objectives and outcomes within the region, including adaptation to low water availability. This is reflected to a considerable extent in the council and agency strategies and plans. For example, North East Water has an aim to incorporate sustainability principles into all of its practices, including through assessing projects on a triple bottom line basis. Similarly, Indigo Shire has an objective of developing and adapting sustainability principles to be incorporated across all council activities. The Rural City of Wangaratta is also aiming to develop and implement a triple bottom line assessment approach.

On the other hand, review of the literature indicates that there are significant barriers to embedding sustainability within council and agency plans and practices. Those practices are likely to apply to councils and agencies in North East Victoria. Implementation of adaptation actions is likely to face similar or additional barriers.

Thus the questions raised by the review of council plans and the sustainability and adaptation literature can best be summarised as follows:

a. How are councils faring at delivering on the sustainability commitments they have made and are they embedding sustainability in their day to day business?

b. What are the councils doing to monitor and report progress on delivering and embedding sustainability into day to day business?

c. What are the barriers to councils embedding sustainability in their businesses?

d. What are the awareness levels and behaviours of management, staff, council and corporate management around climate change and variability?

e. Do the barriers identified in c also apply to climate change adaptation? Are there other barriers to adaptation?

Notwithstanding identified barriers, consistent messages emerge from the review of council plans and other documents to indicate that there are potential pathways and tools that can be implemented to overcome the barriers.

The discussion in the Environmental Sustainability Commissioner's report, for example, on the role of organisational structures in sustainability changes talks about introducing dedicated teams to work on this as a project. NEW has set up just such a team to consider all the key issues which need to be addressed in order to achieve its target of zero emissions and embedding sustainability practices in everything they do.

The overarching message from studying these documents is that addressing the 'climate' in which regional organisations are trying to address climate change, is a complex task.

Both the reports on adaptive capacity highlight the multi-layered social, political and cultural factors which need to be addressed both within and outside of the individual organisations.

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7. References

The following documents formed the basis of the Literature Review:

Document Name	Author	Publisher	Date
Strategies			
The Hume Strategy for Sustainable Communities 2010 – 2020		DPCD	July 2010
Plans			
Alpine Shire Council – Council Plan 2009 – 2013: 2010 Update		Alpine Shire Council	
Alpine Shire Council – Local Voices Shaping Our Future		Alpine Shire Council	June 2010
Indigo Shire Council – Council Plan 2009 – 2013: 2010 Update*		Indigo Shire Council	
Towong Shire Council – Council Plan 2009 – 2013: 2010 Update		Towong Shire Council	26 July 2010
Rural City of Wangaratta – Council Plan 2009 – 2013*		Rural City of Wangaratta	
City of Wodonga – Council Plan 2009 – 2013*		City of Wodonga	June 2010
North East Water – Corporate Plan 2010 – 2011		North East Water	
Goulburn-Murray Water – Corporate Plan 2010/11 – 2015/15		Goulburn-Murray Water	July 2010
Other			
North East Victoria – Adapting to a Low Water Future: Phase 3: Revision of Existing Council Plans and Strategies – draft	Narelle Martin (Two Hemispheres Environmental Consulting)	North East Greenhouse Alliance (in progress)	May 2011
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Report for Climate Change Risk Assessment and Adaptation Planning – Alpine Shire and Towong Shire		North East Greenhouse Alliance	May 2010
Background to Environmental Assessment Tool	Narelle Martin (Two Hemispheres	Regional Development Victoria and Department of	May 2010

Document Name	Author	Publisher	Date
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Environmental Assessment Tool	Narelle Martin (Two Hemispheres Environmental Consulting)	Regional Development Victoria and Department of Sustainability and Environment	June 2010
Environmental Assessment Tool – Lessons Learnt	Narelle Martin (Two Hemispheres Environmental Consulting)	Regional Development Victoria and Department of Sustainability and Environment	July 2010
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Drivers to Sustainability in Local Government	S Pillora N Blackburn S Artist Institute for Sustainable Futures – University of Technology Sydney (UTS)	Urban Sustainability Support Alliance	2009
Barriers to Sustainability in Organisations		www.cloudcitizen.com	2010
Community Based Social Marketing	Doug McKenzie-Mohr	Fostering Sustainable Behaviours www.cbsm.com	2010
New Indicators of Vulnerability and Adaptive Capacity	W Neil Adger, Nick Brooks, Graham Bentham, Maureen Agnew and Siri Eriksen	Tyndall Centre for Climate Change Research	Jan 2004
Framing Vulnerability and Adaptive Capacity Assessment	Ben Preston and Mark Stafford-Smith	CSIRO	2009
Adapting to Climate Change through local municipal planning : barriers and challenges	Thomas G. Measham Benjamin L. Preston Timothy F. Smith Cassandra Brooke Russell Gorddard Withycombe Craig Morrison	Springerlink.com	May 2011
A Framework to Diagnose Barriers to Climate Change Adaptation	Suzanne C. Moser and Julia A. Ekstrom	PNAS Early Edition (Proceedings of the National Academy of Sciences of the United States of America)	November 2010

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Document Name	Author	Publisher	Date
Other References			
ICLEI - Cities for Climate Protection Australia Adaptation Initiative Local Government Climate Change Adaptation Toolkit		www.iclei.org/	

* These documents are currently under review