

## Hamilton region climate change scenario workshop DRAFT report (NOT FOR CIRCULATION)

A joint initiative of the Global Cities Institute's Climate Change Adaptation Program and the Community Sustainability Program. 2008

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# Introduction

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A scenario thinking workshop provides a powerful way to combine climate change impact, mitigation and adaptation issues into regional planning – bringing it into the awareness and focus of the community.

It involves the preparation of briefing papers on climate change issues affecting the region. These are provided to a small number, ideally no more than twenty-five, representatives of diverse sectors within the community (people with different ages, ethnicities, occupations, hobbies, values, beliefs, etc) who participate in the scenario thinking workshop. The participants are brought together for two days to share their perceptions, local knowledge, expertise, desires for and fears for the future of their community. They reflect on the climate change material as well as any other critical social, technological, environmental, economic, political and cultural issues that will affect the future of the region and consider what could occur in the future.

The participants create rich and diverse ‘stories’ of possible futures. The level of climate change is the same in each scenario story, but the adaptation responses taken, the consequences of those choices and the impact of the other factors affecting the region result in very different end-points for the stories. This process helps the participants to understand in greater detail the complex interconnections of the issues, the importance of their choices, the conflicts and trade-offs that may be faced by decision makers and the options they have to influence what does unfold.

After the workshop the scenarios are written up in more depth and communicated widely within the community. The scenario stories are used as a tool to foster discussion and debate about what should be done, by who and when. It gives the community a way to focus on the issues and provides a process for deciding on actions to take individually and collectively. It creates energy for action and with supportive follow-up activities we believe it can lead to lasting commitment and participation in climate change mitigation and adaptation activities.

Researchers within the Global Cities Institute, Climate Change Adaptation Program (GCI-CCAP) and Community Sustainability Program (GCI-CS) at RMIT University are utilising scenario thinking as a way to assist communities to respond to climate change. A scenario thinking workshop was held with community members of the Hamilton region of Victoria in February 2008. This report is a brief summary of what occurred at the Hamilton region workshop, the scenarios generated, the initial analysis that was done and next steps identified by the participants. Currently local writers are generating more detailed versions of the four scenario stories. Once that is completed further work is planned with the community of the Hamilton region to discuss the scenarios and use them in adaptation planning and activities. Further scenario thinking workshops are being planned with other communities in Australia and overseas. For more information contact: Dr. Jodi-Anne M Smith, Senior Research Fellow CCA and Scenario Thinking, email: [jodi-anne.smith@rmit.edu.au](mailto:jodi-anne.smith@rmit.edu.au), phone: 03 99252081, mail: GPO Box 2476V, Melbourne VIC, 3001.

## The Hamilton region

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Situated 300 kilometres from the metropolitan centre of Melbourne, Hamilton is a significant regional centre in the relatively prosperous farming districts of western Victoria. Like many other substantial towns in Australia, Hamilton's development as a regional centre over the past 150 years has been founded on a steady expansion of an agricultural sector based predominantly on wheat, sheep and cattle grazing. Colonial settlement depended on the division of land and diversion of waterways to make way for European farming systems. Today, while the economy of the western district still continues to be dominated by wool, beef and dairy properties; the booms and busts in the global wool market have led to major ups and downs in the local economy. Many members of the community are now discussing new ways of mitigating the risks of an economic monoculture by actively seeking new opportunities for economic diversification within the region. New industries, such as the blue gum plantations and mineral sands mining, have been embraced by some sectors of the community as a desirable and much-needed strategy for rural renewal (Nadarajah and Donati, 2008) while others have expressed doubts about the environmental sustainability of these resource industries (see Bird 2007).

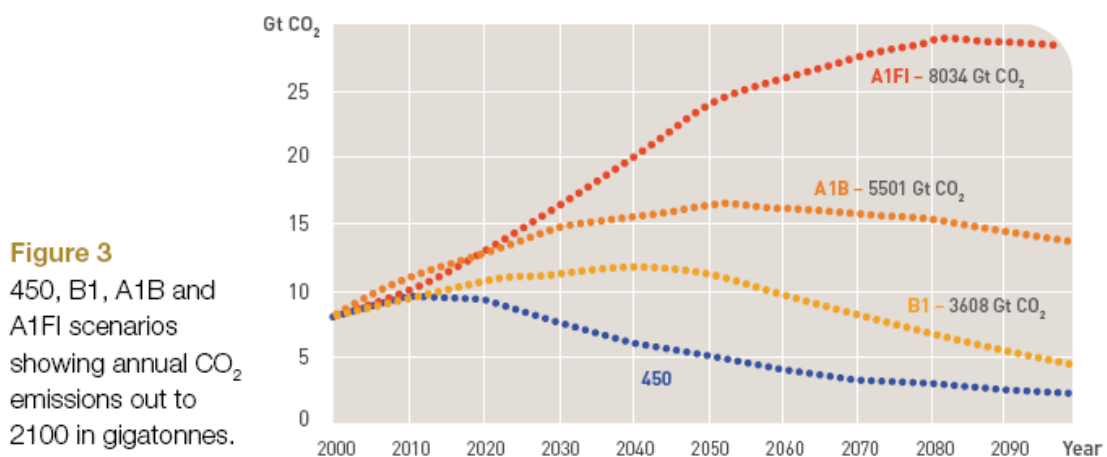
Researchers from the Global Cities Institute's Community Sustainability Program have been conducting a 'Local-Global Project' in the Hamilton region since 2004. The project aims to explore local responses to issues of global scope and character with a Community Reference Group. Social learning opportunities are created for the community to undertake dialogue, shared research, decide on and take responses to issues of growing concern across the region. Climate change became an area of concern raised by the Community Reference Group. In response to these concerns the researchers organised a climate change forum in April 2007.

More than 70 people from across the Hamilton region attended the forum. Speakers included representatives of Southern Rural Waters, the Victorian Farmers Federation, the Environmental Farmers Network, Landcare, the Department of Primary Industries, and the Globalism Institute of RMIT University. Keynote addresses were given by Dr Bill Kininmonth, consultant to the World Meteorological Organisation and former head of the National Climate Centre, and Professor Peter Hayes, Director of the Nautilus Institute in San Francisco and leader of climate change adaptation research in the Global Cities Research Institute at RMIT University. Different views were expressed regarding the likely impacts of climate change in the region but the prevailing sentiment was that the time for sitting on the fence had passed and the organizers of the forum were asked to look for ways to build on the momentum of this gathering. It was decided that a scenario thinking workshop on the impacts of climate change and the future of the region would be a useful next step. The scenario thinking workshop was held in February 2008.

## Predicted climate change

At the time of the workshop the latest publication on predicted climate change for the Hamilton region was the Department of Sustainability and Environment (DSE) 2004 publication titled '*Climate change in the Glenelg Hopkins Region*'. Since then DSE has published an updated 2008 version which contains more detailed information compiled from the International Panel on Climate Change, 2007 publication 'Fourth Assessment Report: Climate Change 2007' and the Australian Greenhouse Office, 2007 publication 'Climate Change in Australia' report. The DSE (2008 p.4) report uses three emissions scenarios to calculate the predicted climate change for the Glenelg Hopkins Region in 2030 and in 2070.

- The **B1** scenario is a **lower emissions growth scenario** and assumes that there is a rapid shift to less fossil-fuel intensive industries. Under this scenario, it is expected that there will be a weak growth in CO<sub>2</sub> emissions until 2040, and then a decline. CO<sub>2</sub> concentrations approximately double, relative to pre-industrial levels, by 2100. A global temperature increase relative to 1990 of 1.8°C (1.1 to 2.9°C) is likely.
- The **A1B** scenario is a **medium emissions growth scenario** where there is a balanced use of different energy sources – not just fossil fuels. CO<sub>2</sub> emissions increase moderately until 2030, but decline by the middle of the 21st century. By 2100 a global temperature increase of 2.8°C (1.7 to 4.4°C) is likely.
- The **A1FI** is a **higher emissions growth scenario** and assumes a continuation of strong economic growth based on continued dependence on fossil fuels. CO<sub>2</sub> concentrations more than triple, relative to pre-industrial levels, by 2100. A global temperature increase of 4.0°C (2.4 to 6.4°C) is likely. This scenario represents the highest level of late 21st century emissions that were thought to be plausible back in 2000. However, recent evidence indicates that CO<sub>2</sub> emissions have been growing at a more rapid rate.
- A fourth emissions scenario is shown in Figure 3: the **450** scenario assumes stabilisation of CO<sub>2</sub> concentrations at 450 ppm (approximately double pre-industrial levels) by 2100, requiring a reduction in global emissions of about 50% by 2050 and 70% by 2100.



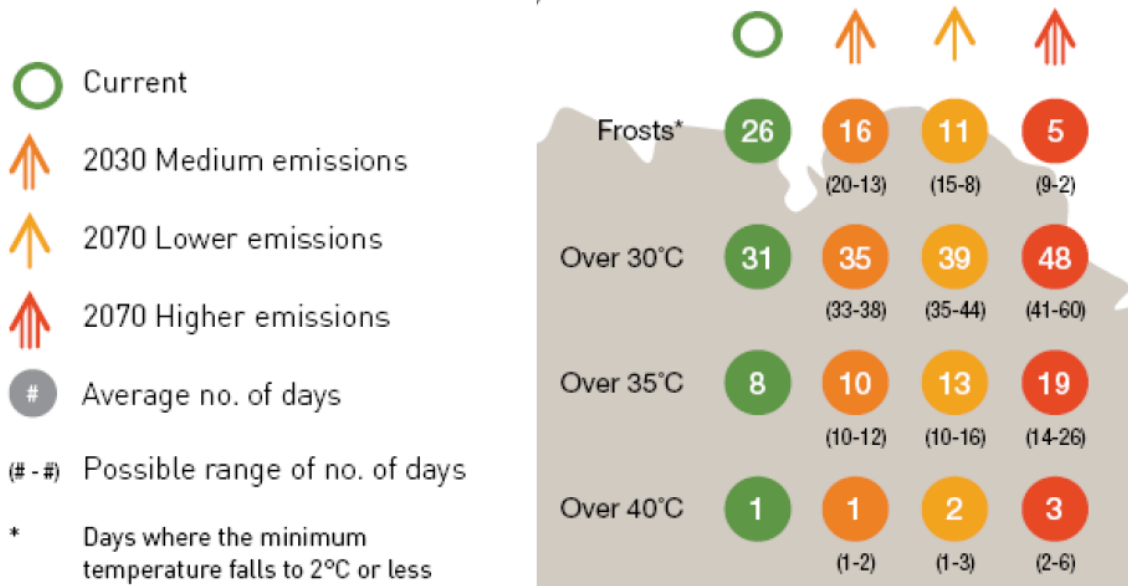
The DSE (2008) base their 2030 predictions on the medium emissions scenario. This is partly because of the current GHG emission levels worldwide and partly due to the fact that the long lifetimes of GHG in the atmosphere means that past emissions will continue to affect the climate for upcoming decades. By altering our emission levels now we can influence the level of future climate change. Hence climate predictions for 2070 are shown for lower and higher emissions.

**Table 2**

Summary of projected annual and seasonal climate changes for the Glenelg Hopkins region relative to 1990 (80% confidence range)

		EMISSIONS GROWTH SCENARIOS		
		2030	2070	
		↑ MEDIUM EMISSIONS	↑ LOWER EMISSIONS	↑ HIGHER EMISSIONS
ANNUAL	Average temperature	0.8°C (0.5 to 1.1°C)	1.2°C (0.8 to 1.8°C)	2.4°C (1.6 to 3.5°C)
	Average rainfall (%)	-4% (-9% to no change)	-7% (-14% to no change)	-13% (-25 to -1%)
	Potential evaporation (%)	2% (1 to 5%)	4% (1 to 8%)	8% (2 to 15%)
	Wind speed (%)	No change (-4 to +4%)	No change (-7 to +6%)	No change (-14 to +12%)
	Relative humidity (%)	-0.5% (-1.2 to -0.1%)	-0.9% (-1.9 to -0.1%)	-1.7% (-3.7 to -0.2%)
	Solar radiation (%)	0.7% (0.2 to 1.4%)	1.2% (0.3 to 2.3%)	2.3% (0.6 to 4.5%)
SPRING	Average temperature	0.8°C (0.5 to 1.1°C)	1.3°C (0.8 to 1.8°C)	2.4°C (1.6 to 3.6°C)
	Average rainfall (%)	-7% (-15 to -1%)	-11% (-23 to -1%)	-21% (-40 to -2%)
	Potential evaporation (%)	2% (no change to +5%)	4% (no change to +8%)	7% (-1 to +16%)
	Wind speed (%)	No change (-6 to +5%)	No change (-10 to +9%)	No change (-19 to +18%)
	Relative humidity (%)	-0.8% (-1.4 to -0.1%)	-1.3% (-2.7 to -0.2%)	-2.6% (-5.2 to -0.4%)
	Solar radiation (%)	1.1% (0.2 to 2.2%)	1.8% (0.3 to 3.6%)	3.6% (0.6 to +7.1%)
SUMMER	Average temperature	0.8°C (0.5 to 1.3°C)	1.4°C (0.8 to 2.1°C)	2.7°C (1.6 to 4.1°C)
	Average rainfall (%)	-3% (-10 to +6%)	-5% (-19 to +10%)	-9% (-33 to +20%)
	Potential evaporation (%)	2% (no change to +4%)	3% (no change to +7%)	6% (no change to +14%)
	Wind speed (%)	No change (-6 to +6%)	1% (-9 to +9%)	1% (-18 to +18%)
	Relative humidity (%)	-0.6% (-1.4 to +0.1%)	-1.0% (-2.3 to +0.1%)	-1.9% (-4.5 to +0.2%)
	Solar radiation (%)	0.4% (-0.2 to +1.2%)	0.7% (-0.3 to +1.9%)	1.4% (-0.5 to +3.7%)
AUTUMN	Average temperature	0.8°C (0.5 to 1.1°C)	1.3°C (0.8 to 1.9°C)	2.4°C (1.5 to 3.6°C)
	Average rainfall (%)	-2% (-9 to +4%)	-3% (-14 to +7%)	-6% (-24 to +14%)
	Potential evaporation (%)	4% (2 to 6%)	6% (3 to 10%)	12% (6 to 20%)
	Wind speed (%)	-2% (-9 to +4%)	-3% (-15 to +6%)	-7% (-28 to +12%)
	Relative humidity (%)	-0.4% (-1.2 to +0.3%)	-0.7% (-1.9 to +0.5%)	-1.3% (-3.8 to +0.9%)
	Solar radiation (%)	0.4% (-0.5 to +1.4%)	0.7% (-0.8 to +2.4%)	1.4% (-1.5 to +4.6%)
WINTER	Average temperature	0.7°C (0.4 to 0.9°C)	1.1°C (0.7 to 1.6°C)	2.1°C (1.4 to 3.0°C)
	Average rainfall (%)	-4% (-12 to +1%)	-7% (-16 to +2%)	-12% (-28 to +3%)
	Potential evaporation (%)	6% (no change to +14%)	9% (no change to +23%)	18% (-1 to +44%)
	Wind speed (%)	1% (-4 to +5%)	2% (-6 to +9%)	3% (-12 to +17%)
	Relative humidity (%)	-0.3% (-1.5 to +0.3%)	-0.5% (-2.1 to +0.4%)	-1% (-4 to +0.8%)
	Solar radiation (%)	1.2% (-0.4 to +3.1%)	1.9% (-0.6 to 5.1%)	3.7% (-1.1 to +9.8%)

### Current and projected average number of hot days and frost days in Hamilton



### EMISSIONS GROWTH SCENARIOS

2030

2070



MEDIUM EMISSIONS



LOWER EMISSIONS



HIGHER EMISSIONS

#### Rainfall intensity

Hamilton	ANNUAL	1.5% (-7.3 to +15.5%)	5.0% (-12.1 to +25.9%)	9.7% (-23.4 to +50.0%)
	SPRING	1.8% (-15.1 to +17.5%)	6.1% (-25.2 to +29.2%)	11.8% (-48.7 to +56.5%)
	SUMMER	0.9% (-22.6 to +24.9%)	2.9% (-37.6 to +41.4%)	5.7% (-72.7 to +80.1%)
	AUTUMN	1.3% (-4.7 to +18.7%)	4.5% (-7.8 to +31.1%)	8.7% (-15.1 to +60.1%)
	WINTER	1.5% (-7.5 to +21.6%)	5.1% (-12.5 to +36.0%)	9.9% (-24.1 to +69.6%)

#### Number of rainy days

Hamilton	ANNUAL	-5% (-17 to -2%)	-8% (-28 to -3%)	-16% (-54 to -5%)
	SPRING	-8% (-26 to -2%)	-14% (-44 to -3%)	-26% (-85 to -6%)
	SUMMER	-5% (-23 to +1%)	-8% (-39 to +1%)	-16% (-75 to +2%)
	AUTUMN	-4% (-19 to +2%)	-7% (-32 to +4%)	-13% (-62 to +7%)
	WINTER	-5% (-11% to no change)	-8% (-19% to no change)	-16% (-37% to no change)

## The CC scenarios workshop

Participation in the Hamilton scenario thinking workshop, held on 4-5 February 2008, was by invitation only and a great deal of thought went into the invitation list. The lead scenarist Sally Jones said that she wanted to limit the numbers to around 35 in order to ensure active participation and it is essential to ensure that different sectors of the community are given voice within the exercise. In the end there were 41 participants (18 female, 23 male) and there was impressive diversity. There were several farmers, an ex school principal, a church minister, an ex-publican, local councillors; a Country Fire Authority representative, artists, business personnel, and community representatives including an aboriginal person and a recent migrant to mention a few. Participants were split into four small groups and taken through a process for identifying and discussing the many factors likely to affect their community's development in the future. They explored what they felt were the most significant risks and uncertainties facing their community. These were used to generate the scenarios. Throughout the two days a number of plenary sessions were held where each small group reported back on their developing scenario and received input from the other participants.



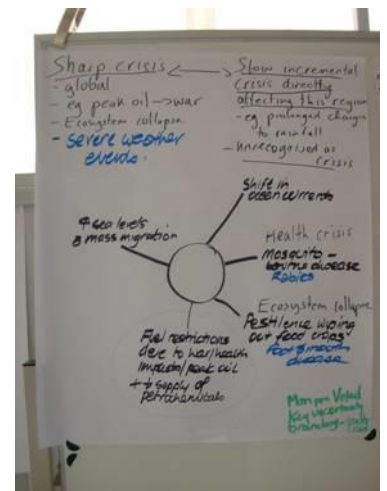
The scenarios produced did not focus on what level of climate change would occur or on how adaptation would be achieved. They focussed on the adaptation challenges facing the region and the likely impacts of these. The scenarios generated show four possible futures for the region. One scenario explores what would happen if there was a mass migration into the community as a result of a climate change related natural disaster in Vietnam. The second explores implications of altering practices within the region to be more in line with aboriginal perspectives of living in harmony with the land. The third scenario explores the impact of high levels of unemployment that could result if farming becomes less viable and the challenges of poverty leads to poor nutrition, increased disease, increased use of addictive escape and other social ills. The fourth explores a future where there is a mass exodus from the region resulting in the closure of small towns and a reduced quality of life for those who remain.



## Misconceptions

Early on the first day of the workshop participants were asked to introduce themselves to a partner, explain where they are from and identify a misconception about climate change that they would like to see people understand. They then had to introduce their partner to the larger group. Below is the list of misconceptions and statements that people made.

- Idea that someone else is going to fix climate change.
- The issues around that individuals can't be the ones to make the change – wants to show that they can
- That one person changing things can't make an impact
- In the community Council doesn't have resources to do more than it financially can
- Difference between trend and variability
- The issue, are we dealing with climate variability or climate change
- Just saying climate change isn't telling the whole story
- That change is bad and the environment will not adapt
- That all observed `so called` climate changes are due to man
- Climate change debate gives chance to run with problem of over consumerism
- That there is nothing to worry about
- Everything gets blamed on global warming
- The way the forestry industry works and the public misconceptions
- People feel the changes happening are part of normal long cycle; people feel if weather can't be accurately predicted 2 days ahead how can they for 40 years
- That we are immune from impact; a lack of understanding that we are part of a whole
- That people don't see a need for co-ordination in climate change
- Individuals may see water use as minor but aggregation of use adds up to substantial impact
- That bottled water is better than tap water
- People think the world is going to keep on going as is – confident we have ability to change
- That we have lots of time to react – but we don't
- That we can afford to be reactive, we must be proactive
- That climate change is not man made – people refuse to believe it
- That bore water can just go on for ever
- People in Papua New Guinea understand weather better than people in Australia
- That wasn't brought up to use water carefully on farm, now sees people are wasteful
- That people believe nature can fix the problem, not well understood that it requires action from people





- The actual name global warming – it's not having a big impact, I suggest a change to human induced climate change
- That urban population is unaware and dismissive of impact and stresses on rural and Koori people will be more devastating
- That climate change doesn't necessarily mean global warming – have not had scientific debate
- That people are anthropocentric in attitude to environment, social issues, only interested in more and more production and consumption
- That people still believe there is population explosion, but there is risk to society from aging as population reduces
- That people think things are going to be alright, especially re water security; need to look at water management
- People don't get that climate change starts on a daily basis
- Why people think we have to choose between the economy and sustainability
- Is the impact imminent?
- That this is a whole community problem, if we work as individuals slow ourselves down
- That we will all be driving solar powered vehicles in the future
- That there is a lack of recognition that the demands on people's time reduces community strength and resilience



## The scenarios

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At the end of the workshop the materials created were given to two community writers, Louise Le Nay and Christina Hindhaugh. They were engaged to take the draft scenarios and ideas expressed by the participants in the workshop and turn them into rich stories of the future. They created a 'context document' titled '*Unexpected sources of hope*' and four scenario stories of possible futures of the Hamilton region. Below are the 'context document' produced and a synopsis of each of the four scenario stories. The writers are still working on the full versions.

### UNEXPECTED SOURCES OF HOPE

It's the year 2030. Hamilton's economy is in recession. Bored and idle youth roam the streets. The back wall of the Art Gallery is smeared with graffiti and windows smashed down McLuckies Lane. Unemployment is high but the emergence of some new industries is providing fresh opportunities at last. The population has been swollen by an influx of farming families from the northern Dundas tableland, forced to sell their farms to multi-national corporations due to long-term drought. Mineral sands mining is finished, the local processing plant closed. The bluegum industry is static – no more plantings due to low rainfall. The local economy is depressed.

As always, this impacts most harshly upon the disadvantaged. In central Gray St, Hamilton, there is a soup kitchen and drop-in centre run on a voluntary basis by the combined churches, which have enjoyed a healthy increase in worshippers. Because of the current fiery hot summers (50% more days over 35 degrees) the entire central block of Gray street is enclosed by a giant temperature-controlled Perspex dome and this has eased the high rates of thermal stress among downtown shoppers. The traffic flow on surrounding streets is light, expensive bio-hydrogen vehicles owned only by the affluent. Every roof in town bristles with solar panels.

Because of continuing drought, food costs have soared and poor nutrition is creating further health problems. So on the old Coles supermarket and carpark site the Council has established a bi-weekly produce market so district people can meet to sell and/or swap home-grown fruit, vegetables, jams, sauces, clothing and bric-a-brac. The whole market area is protected from the sun by brightly covered shade-cloth sails, and is a scene of great bustle and activity each Tuesday and Thursday with barter being the predominant method of trade.

The Art Gallery has a new wing devoted to local district artists and the current exhibition is internationally renowned Hamilton photographer Hanif Guerrero's work on the Great Grampians Fire of 2012 which burned from Mirranatwa to Peshurst, wiping out most of Dunkeld. Archeologists have since uncovered a section of a very large wall....

At the library next door there is a small historical display of printed books. The principal collection is in the form of e-books, distributed online.

In the southern carpark behind Gray Street, a fleet of delivery vehicles is housed. Because of the extreme cost of travel, most people order their food online and it is delivered weekly all around the shire.

On the site of the old Hamilton Club a call-centre has been established. It's a government sponsored initiative to provide jobs for 200 long-term unemployed. This company tele-markets Australian holiday packages to buyers in India, which is where the world's recreational wealth predominates. A government subsidised day-care centre operates on the same site so that children can be cared for while their parents work. Men are still paid a higher hourly rate than women.

Old Monivae Homestead on the Port Fairy road is now the headquarters of Hamilton's international accounting firm, Gatto-Mochbel, which employs 150 chartered accountants to deliver e-accounting solutions on-line for Chinese merchant banks.

The Hamilton hospital has a special emergency wing to treat heat stress, de-hydration and related breathing difficulties which are chronic among babies and the elderly and infirm. Due to poor water quality dysentery and gastro infections are endemic. During the Teenies (2010 – 2020) the Western District Health Service had to cope with a resurgence of encephalitis as well as a severe bird flu epidemic, but at least the general population has now been protected by immunization against any further cancer, Parkinson's Disease or Early-Onset Dementia.

In the farming areas south of Hamilton the low rainfall has precipitated a grain boom. On farms previously too wet to grow crops, the land around Peshurst, Macarthur and Hawkesdale now produces bumper harvests of GMO cereals and oil seeds which are sold at high prices to a hungry world. The farms are huge monocultures – canola, wheat, barley. The impact of these monocultures on local flora and fauna is causing friction between farmers and green groups. Eco-vandals are slashing tractor tyres and suspected of lighting fires.

This isolated area of high prosperity promotes envy from outsiders and a siege mentality has developed among these southern farming families. Some farms are now entirely protected by laser alarm systems and security fencing.

North of Hamilton on the Dundas tableland, the unrelenting dry seasons have decimated cereal cropping, and this has been replaced by broad-acre animal protein production for the Middle East, mainly from a new hybrid ruminant called a shoat - a cross between a goat and a sheep. Most farms around Coleraine, Brit Brit and Balmoral now average 8000+ ha in size, are corporate owned, and totally without wire fences. "Virtual fencing" controls the shoat flocks electronically from the farm office by means of tiny nano-technology transponder implants which guide and/or train the animals' eating/drinking habits by tiny electric shocks. Feed and water supplies are monitored online with video cameras, and consequently these macro farms require few farm labourers.

Through cloning and genetic modification, the shoat flocks are worm and external parasite resistant; they thrive on low-grade pasture and weeds, and minimum moisture. Their feed is supplemented with mineral nutrients and rumen biota to maximise production and reduce methane output.

However, animal welfare is an international market imperative and these farming corporations' risk management strategy includes implanting each animal with a Well-Being microchip which monitors the animals heat-stress levels at all times. A Well-Being score is mandatory alongside weight-gain and other performance indicators in sales brochures.

Around Vasey, Gringegalgon and Cavendish the giant farms are interspersed with a few small remaining family farms, usually run by elderly farmers who struggle on in a cottage-industry type enterprise, clinging on to the old ways and in reality running down their asset rather than selling out and moving into town. Some small landholders have gained federal government Land Stewardship contracts to stay on their farms and manage the environment, but the continuing drought and consequent onslaught of pests and weeds make this a difficult and depressing job. Some innovative small farms are breeding kangaroos and possums for meat and skins. In Coleraine there is a new abattoir devoted to native animal slaughter which employs 40 people. North from Balmoral most farmers have leased their land out to solar energy companies and the Kanagulk plains shimmer in the sun from hundreds of thousands of solar panels pointing towards the sun.

Throughout the district water is rationed and extremely expensive. Water supply (through the National Water Grid) is controlled federally. Hamilton has been kept on Level 5 restrictions for the past 7 years. Green lawns are a memory. Flower gardens rare. Most families have a productive vegetable patch, recycling water from their own domestic supply. A devoted army of service-club volunteers keeps alive the historic European trees in the Hamilton Botanic Gardens, watering by hand with water saved from each household outflow. No-flush eco-toilets are mandated and odour a problem.

Hamilton has led the way in establishing a local bio-fuel factory using algae from Lake Hamilton. It employs 37 people and supplies fuel for government emergency vehicles and public transport.

The district roads have broken down in an alarming way due to a lack of bitumen, which, being an oil-based product, is no longer procurable. The main arterial highways are

cemented, but all other regional roads have reverted to gravel and corrugated dust tracks, virtually impassable at any speed above 20 kph in a wheeled vehicle.

The new generation of hovercraft (fuelled by bio-fuel) is beginning to replace b-doubles on these gravel roads. Although parking them is a problem in a high wind. Most freight was transferred back to a restored rail system during the Teenies (2010 – 2020) but the continual damage to tracks caused by climate extremes has made rail transport increasingly problematic. And after the tragic derailment of the Melbourne - Portland VFT in 2014 at Glenthompson due to buckled tracks, resulting in the death of 17 people with 65 injured, the system has fallen out of favour.

A happy consequence however of the prohibitively high travel costs has been a resurgence of social activity in the small communities like Balmoral, Warrayure, Nareeb Nareeb-Woodhouse and Wannon. People get together to make their own fun locally, and village halls once again resound with music, plays and balls all featuring family participation. Quiz Nights, Bingo Nights, Bush dances and Religious Revival meetings have become the mortar for small communities who can no longer travel to larger towns.

On a global level, the melting of the ice caps has caused the ocean levels to rise and several Pacific islands have become submerged in the last decade, their inhabitants relocated to bigger islands, to New Zealand, to the east coast of Australia.

Hamilton has been assigned 2 thousand refugees from around a submerged Ho Chi Minh City, and a further 1.5 thousand from a small archipelago in Indonesia. The Indonesians are mostly Muslim. They are all being housed in tents at the showgrounds.

Consultation about this relocation was scant. The initial goodwill towards these displaced people has fallen away. After several months, the showgrounds has turned into a dustbowl. Local sentiments range from “disgruntled” to “mad as hell”.

These “fobs” (Fresh Off the Boat) have language differences, cultural differences, religious differences and emerging health problems. Health screens were not conducted at the border, due to a lack of staff, and many diseases are now emerging, including a spike in TB infections and Hepatitis G. Added to this, the lack of manageable hygiene in the refugee camp has resulted in several cholera outbreaks, which health authorities have struggled to contain. Gastroenteritis is rife. A rash of skin disorders and some birth defects is being researched. There seems to be a link between these and the new generation of water treatment chemicals.

The birth-rate is climbing, and so, unfortunately is infant mortality. Health services, chronically understaffed and underfunded, are struggling to cater for the increasing population.

Loss of a domestic pet has been magnified in the papers to a “spate of pet losses” and a letter campaign has raised the notion of refugees hunting for domestic animals at night. It’s increased suspicion and hostility.

People thought the use of the showgrounds was temporary, but it is looking permanent, although there is a housing construction plan underway. The local building contractors stand to make a lot of money. Some contractors have already laid off regular workers and illegally hired refugee labourers at a fraction of the wage.

The plan is to put some refugee families into the smaller northern towns, either into empty housing (left by vacating farmers) or into newly constructed Government housing.

These small communities are encouraged to be self-sufficient because of the cost of transporting produce, and it is felt that the islander lifestyle will fit into this. Small dairies, butter factories, bakeries are being developed. In this subsistence economy, some towns have put aside common land for vege growing and trade is by barter.

Resentment towards refugees gathers pace. They seem to be getting a sweet deal, while the poor in the population are still waiting for housing. In fact, building materials are in short supply. Cement, adobe-style materials require too much water, timber is rationed. Research is being undertaken all over Australia to find low-cost, low-water building alternatives.

There are regular complaints that refugees refuse to contribute to the community. Emergency service groups such as SES, CFA and Red Cross are lobbying the government to extend National Service to young refugees. (Currently all Australian school leavers are required to spend two years “Nasho” training and serving in one of the emergency services). There is a petition being circulated around the churches to include refugee youth in Nasho.

The town kids (mostly male) form gangs, out of boredom and a desire to “belong”. There are Towners, FOBS (refugees) and Offlanders (children of those who have moved in off farms). These kids are part of Gen Zed. They harbour resentment towards Gen X who failed to fix the mess left by the hated, profligate Baby Boomers. A booming trade in illegal drugs – including the new scourge, Hammer – takes place under the overpass by the old railway yards.

A temporary mosque which is erected for the refugees is regularly damaged by graffiti. There are community meetings to gather support to oppose the construction of a permanent mosque.

The indigenous population in the south is now in possession of what is considered some “prime” farm land. The elders have resisted attempts to buy them out by major farming corporations. They operate a traditional community, hunting, fishing and farming for themselves with sales of smoked eel and bush tucker to Hamilton and beyond. There was great opposition to the elders’ proposal (of 2008) to re-dam Lake Condah, although it has turned into a complete success.

Health professionals, church and community leaders are aware that mental health is deteriorating. Depression is wide-spread, especially amongst the young. But the community is determined to overcome this and has come together to plan a series of food expos, cultural festivals and general celebrations. The century is reaching its silver jubilee, and a number of events are being planned, sponsored by Geoff Handbury from Eventide Homes. Highlights include a visit from the Geelong Premiership team of 2007 (they haven’t won a premiership since, but they’re still celebrating), an address by Nobel laureate and Cavendish local – Martha Duncan – who won the Biology Prize for developing the shoat. And the main attraction – the Farewell performance from Dame Kylie Minogue, who at the age of 62 years young, has finally decided to retire.

## **Hamilton future stories in synopsis**

### **1) Lake Condah Sustainable Development Project, 2030**

After many years of persistent drought in the Hamilton region many farmers have gone out of business and many other farm enterprises are struggling to survive. There has been a significant dieback of trees and exposed grasslands and a noticeable reduction in biodiversity. However, the wetland system surrounding the old Aboriginal mission at Lake Condah, which was restored before the long dry began, has become a refuge for birds and the Aboriginal community is benefiting from the success of the Lake Condah Indigenous Discovery Centre and the Lake Condah Bush Foods factory and outlet. Local farmer old Jack Murphy had thought the reflooding of the Lake Condah wetlands a waste of time and money when it took place but 20 years later, on a visit to the Lake Condah Indigenous Discovery Centre in 2030, he is blown away by the refuge that has been created and especially by the presence of so many species of birds that are no longer sighted anywhere else in the region. He has to admit to Aboriginal community leader Billy Lovatt, whom he had coached in junior football, that his earlier criticism of the project had been well wide of the mark.

## 2) **Danny's story**

Danny Brown did it tough when he grew up with struggling parents and he found himself alone, with his beloved dog Beetle, when both parents died soon after he managed to find a job drawing cartoons for the Weekly Times newspaper. Danny's talent for drawing had been noticed by one of his teachers at high school and she helped him to get into an appropriate course at technical college and then into the job at the Weekly Times. Danny had always been a survivor and, in particular, he managed to accumulate some personal assets by selling rare plastic bottles that he had collected as a child. Because he knew what it was like to have very little as a child, Danny made a special effort to support young people living in the camp for Vietnamese climate change refugees that was set up at the showgrounds in 2030 and he was a regular visitor to the tent city. However, others in the town were much less hospitable to the refugees who had been assigned to the region and violent conflicts broke out between rival youth gangs from the camp and the town in 2035, resulting in seven deaths. Hostility towards the refugees intensified when it was learnt that hungry camp residents had killed and eaten some 'stray dogs' who had come into their camp and when Danny discovered that his beloved Beetle had gone missing he went to the camp to find him. When Danny confronted some people he knew about what might have happened to his dog a scuffle broke out and Danny died when his head struck a rock after he was knocked to the ground. Danny's death provoked some strong reactions in town and in the refugee camp.

## 3) **Damian McCrae and Georgia D'Ambrosia**

When Damian McCrae took over the management of the historic family farm in the district of Cavendish from his father Donald McCrae the effects of climate change were already causing major adjustments in farming strategies and Damian had returned from agricultural college with new ideas about how to survive the crisis; ideas that his father found difficult to accept. Soon after taking responsibility for the farm Damian met and married regional health worker Georgia D'Ambrosia who grew up in Melbourne in a family that most farmers would disparagingly label as 'urban greenies'. Georgia had not been adequately prepared for the role of rural health promotion officer at a time when new and acute health problems were emerging as a result of severe heat stress and the spread of new diseases related to climate change. To make matters worse, a lack of transport options and deteriorating roads made it expensive and difficult to cover the district and she felt she could never keep up with the demands. Georgia had chosen a rural life because she wanted to be 'closer to nature' but nature was making her life difficult and her husband Damian was equally stressed. Unexpectedly, Georgia found solace in talking to Damian's grandfather, Fergus, who was still

living on the farm, and she came to understand that his deep local knowledge could be more of an asset in the new conditions than Damian had ever thought.

#### 4) Nguyen Pham’s campaign speech in 2050

Nguyen Pham arrived in Hamilton as a climate change refugee from Vietnam when she was just 14. She lived with her parents, a brother and a sister in the tent city established at the Hamilton showgrounds in 2030 and the whole family found the bitter winter hard to take. As dysentery and TB claimed the lives of other children in the camp Nguyen and her siblings were cheered by the generous donation of clothes and toys from the local Red Cross and Combined Churches group and the whole family benefited from English lessons run by some retired teachers in the Ram Sale shed at the showgrounds. Sadly, Nguyen’s older brother was killed in the gang wars of 2035 that rocked the Hamilton community and caused a lot of soul-searching. The son of the eminent Hamilton heart surgeon Charles Cameron, Brett Cameron, had been the nominal leader of the gang responsible for Nguyen’s brother’s death and although Brett was not present at the time Charles decided to make a special effort to support the bereaved family. Many years later Nguyen Pham and Brett Cameron met by accident in the US and a shared love of music brought them into a relationship that resulted in marriage. Nguyen and Brett returned to live and work in the Hamilton region and in the year 2050 Nguyen is launching her campaign to become mayor. Her opening campaign speech recounts the story of what has happened in the district since the tragic death of her brother in 2035 and explains why she thinks that things are looking up for the district in 2050.

## Implications for Hamilton region adaptation to climate change

In the afternoon of day two of the scenario thinking workshop participants were asked to analyse the scenarios created to identify the implications for the future of the region and identify potential strategies to enhance ‘desirable outcomes’ and decrease the likelihood of ‘undesirable outcomes’. Below is a list of the implications and strategies participants generated. It should be noted that this was a very quick, initial analysis. Once the scenario stories have been completed by the community writers they will be circulated widely for further discussion, analysis and use in adaptation planning for the region.

<b>Issue</b>	<b>Implications</b>	<b>Strategies</b>
Water	<ul style="list-style-type: none"> <li>Supply issues and competition for use is going to get worse</li> <li>Need to start now to prepare on larger scale for less water.</li> <li>Focus on water security.</li> </ul>	<ul style="list-style-type: none"> <li>Horticulture, water desalination – work with the University.</li> <li>Develop use of bore water.</li> <li>Develop grey water systems</li> <li>Work together to resolve the water licensing issues.</li> <li>Develop a proper market for water. Regulation of water use.</li> </ul>
Energy	<ul style="list-style-type: none"> <li>Energy supply will be important issue</li> </ul>	<ul style="list-style-type: none"> <li>Clean renewable energy and be open to other energy development systems.</li> <li>Exploration of alternative fuels and energy systems in the region.</li> </ul>

Peak oil	<ul style="list-style-type: none"> <li>Limited access to oil based products (eg: fuels, fertiliser)</li> <li>Increased costs to produce and transport produce</li> </ul>	<ul style="list-style-type: none"> <li>Research impacts of peak oil and possible solutions</li> <li>Locally grown and sold produce</li> </ul>
Farming	<ul style="list-style-type: none"> <li>Long term consequences of particular land uses. How do you work through this with people? Need to think through consequences before big investments are made.</li> <li>Too much reliance on timber industry.</li> <li>The old town/country divide already overtaken by town/corporations.</li> <li>Corporation farms may have some positive or negative impacts.</li> <li>Recognise we have DPI, C&amp;A – fund of knowledge to build on.</li> <li>Will we be the Food Bowl and for how long?</li> </ul>	<ul style="list-style-type: none"> <li>Strategies for land use discussions</li> <li>Research impact of corporate farms</li> <li>Diversification of income and employment options</li> <li>Food bowl planning</li> <li>Continue programs with DPI, C&amp;A</li> </ul>
Health	<ul style="list-style-type: none"> <li>Mental health (Need to look at total health).</li> <li>Personal touch, people are able to help others – it's a very powerful force, bringing hope to people.</li> <li>Mental health and despair issues – Hamilton was not capable of dealing with that.</li> <li>Lead Australia in aspects of health care – planning ahead – link to research.</li> <li>Intention of early intervention before suicide occurs. Pick up signals early.</li> </ul>	<ul style="list-style-type: none"> <li>Plan for expansion of mental health services</li> <li>Use One to one contact for health care</li> <li>Develop a Men's Shed to help cope with the situation.</li> <li>Establish five very broad indicators of wellbeing – 1) productivity, 2) creativity, 3) links to nature and environment, 4) social and 5) physical activity</li> <li>Develop suicide prevention strategies</li> <li>Plan for welfare provision.</li> </ul>
Community Cohesion	<ul style="list-style-type: none"> <li>Must attend to social connectedness now before breakdown gets severe.</li> <li>Community organisations exist but are waning.</li> <li>We would like to see more population if we lose population.</li> </ul>	<ul style="list-style-type: none"> <li>Support social groups, local service clubs, “clone” Peter Cook.</li> <li>Need a kick in the backside – help others who are undergoing extended drought.</li> <li>Strategies to attract population and keep youth</li> </ul>
Refugees	<ul style="list-style-type: none"> <li>Assumption that they will be from an agricultural country, they may not be.</li> <li>Need actions to develop early.</li> <li>Question of a non-Christian centre of workshop – regional leadership</li> </ul>	<ul style="list-style-type: none"> <li>Attend to global linkages now.</li> <li>Cultural activity to create understanding. Cultural exchanges to occur now. Shift our vision to be open to other ways.</li> <li>Farm exchanges with different</li> </ul>



	<p>strategy? How is the region going to deal with this?</p> <ul style="list-style-type: none"> <li>• May be problems in schools with refugees and local kids. They may not get along, they may have different needs.</li> </ul>	<p>countries (two ways).</p> <ul style="list-style-type: none"> <li>• Plan for possibility of refugees and how would house and service their needs.</li> <li>• Consult Vietnamese elders and build initiatives for cultural understanding in to school programs eg: cooking, gardening.</li> </ul>
Crime	<ul style="list-style-type: none"> <li>• Rise of crime predicted in several scenarios due to unemployment, boredom, frustration, poor refugee living conditions, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Need for institutions to be better financed to address crime eg: police</li> <li>• Plan positive activities for youth</li> <li>• Learn how other communities deal with it</li> <li>• Koori Court – Vietnamese system to reduce the crime rate.</li> </ul>
Getting behaviour change	<ul style="list-style-type: none"> <li>• Presence of fear – already in the community e.g. terrorism, personal level, climate change. How do we remove this fear? Create empowerment?</li> <li>• We are aware of these issues now, but have limited understanding and knowledge of what we can do.</li> <li>• Limited infrastructure exists to deal with them.</li> </ul>	<ul style="list-style-type: none"> <li>• School programs – start young.</li> <li>• Community involvement – to reduce negative feelings.</li> <li>• Explanations to our communities.</li> <li>• Increase the face to face contact</li> <li>• Inform people from the bottom up.</li> <li>• Focus on what we can do as a small community eg: use cars less, walk and ride bicycles more</li> <li>• Review quality of the awareness program. Focus on behaviour change techniques.</li> </ul>
Learning from each other	<ul style="list-style-type: none"> <li>• Identify the survivors of hardship and learn from them</li> <li>• Danny had a certain toughness about him – toughness and resilience – he will adapt.</li> <li>• Climate Change – tap into Grandpa’s experiences.</li> <li>• Learn from other parts of the world. That would be helpful.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop programs to interview and capture wisdom from different groups that have survived hardships such as drought eg: Aboriginal community, Grandparents, Older generation of farmers, overseas communities</li> <li>• Programs to build resilience in kids</li> </ul>
Leadership and focus	<ul style="list-style-type: none"> <li>• Regional governance is becoming much more critical. No regional collective vision for healing the land.</li> <li>• Hamilton needs to adapt even though it’s difficult – leadership – we can learn from each other.</li> <li>• Call for leadership in the community – change within the community.</li> </ul>	<ul style="list-style-type: none"> <li>• Change priorities to include regional areas. Create regional vision. We need to come together and develop a sustainable system</li> <li>• Encourage leaders throughout the community on these issues</li> </ul>
Role of Education Industry	<ul style="list-style-type: none"> <li>• Education industry is very important. If population declines we may lose some teachers jobs or even some of the smaller</li> </ul>	<ul style="list-style-type: none"> <li>• Strong base in education sector – plan for a future e.g. specialising in environmental education, Asian education. National Farmer Health</li> </ul>

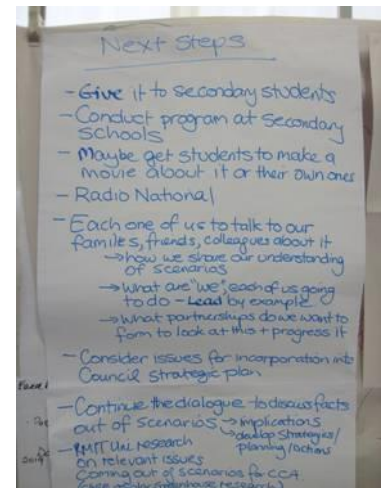
	<p>schools. There may be impacts on students if the curriculum gets narrowed as a result, if they have to travel longer distances to attend school.</p> <ul style="list-style-type: none"> <li>Higher and vocational education opportunities could attract new residents and keep youth</li> </ul>	<p>Centre.</p> <ul style="list-style-type: none"> <li>Projects in urban schools – urban children more interested in our environment, work in schools to raise awareness about life on farms.</li> <li>Identify opportunities for higher and vocational education courses taught locally. Build on RMIT Hamilton.</li> </ul>
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## Next steps

### **Identified as desirable by participants during the workshop**

Participants were told that the scenarios generated during the workshop would be typed up into a report and that it would be circulated back to each participant for comment. Once the report is compiled, we then have an opportunity to use it in a number of ways. Participants were asked what they thought should be the next steps:

- Give the report to the Secondary students.
- Conduct the same program at Secondary schools.
- Maybe get students to make a movie about it or their own ones.
- Radio National.
- Each one of us to talk to our family, friends, colleagues about it
  - How will we share our understanding of scenarios?
  - What are “we”, each of us going to do – lead by example?
  - What partnerships do we want to form to look at this and progress it?
- Consider issues for incorporation into Council Strategic Plan.
- Continue the dialogue to discuss facts out of scenarios – implications
  - develop strategies/planning/actions
- RMIT University research on relevant issues coming out of scenarios for Climate Change Adaption (eg: CARE – solar greenhouse research).
- Starting point for discussions in community.
- Communicating scenarios – art, photo, amateur theatre play – there are many ways to get people involved and to continue the process.



### **Identified as most important next step by participant's on their evaluation forms**

Participants completed evaluation forms at the end of the two day workshop. One of the questions listed was 'What do you think is the most important next step to be taken on these issues for the Hamilton region?'

- Integrated/coordinated response – use the energy and outcomes of workshop. Call people back to the group to do more.
- Promote scenarios to the community.
- I think it is very important to involve the secondary school students in making comment on the scenarios without guidance. Do not inhibit their vision.
- Analysis of the results and re-synthesis.
- Do a similar thing with a group of young people.
- That people can really put this into practice. Raise the issues in the wider community and make real change/positive change occur.
- Develop the scenarios to a much higher stage of completeness and utilise them to develop opportunistic and defensive strategies.
- I do not know.
- To publish and distribute the movie scripts on the web and to community groups represented by people present at the workshop e.g. one or more RMIT people could go to community groups to present the scripts, preferably using multimedia (to make the presentation like a 'movie').
- Reflection and review of scenarios. Sharing of scenarios with others.
- After writing out the scenarios properly, to bring these very real scenarios to the relevant government bodies and also to the grassroots. Find possible solutions and bring more awareness to larger groups.
- Promulgation of the challenges the scenarios have thrown up.
- Ownership of some of these things at a local level.
- That the scenarios be seriously considered and preliminary plans drawn up to address emerging issues and, if required, implemented.
- Define the main issues and discuss process to prepare for/deal with them.
- Gain further "feeling" and then add this to "facts" to get to some decisions.
- To have the scenarios given to appropriate groups over the district to work through to address.
- Monograph published by RMIT. Use in community forums. Talks to schools. Write up of stories.
- Radical action co-ordinated by the community. Forward thinking – beyond current concerns of farmers.
- Creation of further community groups to address issues – current and future, and to further community education and discussion: especially more youth 'action' groups/involvement.

## Reflections on the workshop

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Below are some of the participants' comments about the workshop as listed on their evaluation forms.

### Did you enjoy the workshop?

- Very much.
- Enjoyed the grouping of interesting minds and diverse views.
- Very challenging, stimulating and great fun – I'm so pleased you invited me.
- Good to discuss issues with others present, stimulated thought.
- I enjoyed the opportunity for intellectual discussions.
- Fantastic diversity of people – well done.
- On the whole – yes, however, there were too many times that direction was unclear, people were allowed free rein to waffle and many frustrations as a result. It was good to part of – finally seeing the end result.

### What worked well?

- All of it; even within the timeframe we had.
- Working in pairs and in groups.

- Commenting on the other scenarios.
- Day 2. Plenary Sessions.
- Group practice and discussion. Group facilitator.
- Excellent group of people. Tables “meshed” well.
- I was impressed by the energy and enthusiasm of presenters. Martin held our group discussions with great skill giving each person attention.
- The conversations and diversity of experience.
- Structured; guided through the complex steps; very good catering and catering volunteers; very efficient typing team to do the notes.
- Group size. Breaking up the day structurally helped us psychologically/tiredness etc.
- People having the opportunity to – present their knowledge, aspirations and ideas. Good range of people (diversity) at appropriate level of seniority. Good thinkers.
- Staying in same group allowed us continuity and helped develop the stories.
- Organisation, food, schedule.
- Size of group right. Good facilitator.
- Group involved in were all very capable. Food good. Leaders.
- People keen to participate. Groups.
- Our group. Good facilitation of whole (workshop). Good facilitation with group.
- Networking. Respect of group members allowed building. Diversity of people. Leadership. The focus on relationships and community impact and that being the basis for dealing with problems like Climate Change.
- The informal discussions – both in groups and in plenary.
- Feedback on scenarios by group. Receiving different points of view/opinions from other team members.

### **What could be improved?**

- More time in small group – less time in whole group.
- It worked well.
- Acceptance of scientific facts as a basis. Reduction of rigidity of thought about flexibility.
- Day 1. Clarification of role. More specific guidelines.
- More time – or provision for longer input period. Better assimilation and utilisation of opportunities and threats in scenarios. Think outside our current biases, experiences, comfort zone, culture.
- I was a little disappointed by the structure e.g. we were told to let imaginations run wild but in fact at times I felt quite controlled.
- The “movie scripts” are very “raw” at the moment – a fair bit of editorial/writing effort is needed to polish them up and make them presentable to other community groups.
- Simple, clear instructions and sticking to time.
- No time to explore concrete steps to handle specific crises.
- Clarification of scenario framework (not all participants in this group really got the grasp of the framework).
- Choosing group participation prior to the day.
- You expected too much from too short a time. It was a bit frustrating not to be able to really think through our stories and complete them. Perhaps groups could be formed through interest rather than choice.
- Not so much “control”. We are volunteers and adults (with various skills). Keep this group together plus representatives from young/disadvantage/indigenous and aged (pensioners). Facilitators from Globalism and Global Cities, RMIT.
- Better understanding of process earlier. Found difficulty understanding initial goals.
- Clarification of process in a better way including facilitators understanding of process – sense making is about the process not just the product. Concern the story may not suit the future reader.
- A one page, simple outline of the process distributed in advance of the workshop would help some people’s feeling at the end of Day 1 that we were floundering; clear guidance that we brainstorm/dream etc to build a scenario rather than immediately address issues.

- Wider involvement of leaders, businesses (non-farm). Was group self selecting? Why the assumption that scenarios have to be at the challenging end? Why not a business as usual option to challenge those who believe the end is nigh?
- Gaining an understanding of our focus by others was difficult because of complexity, abstractness and interdimensional nature of vision.
- Focus, process, group facilitation, clarification of direction, make up of groups – people needed to be able to think further outside the box – constrained by mainstream Climate Change debates.
- Don't let participants waffle in plenary. More time/better time management/group leadership. More diverse people – done reasonably well but need different backgrounds, ages, employment groups etc. Venue acoustics. Advanced information on process.

### **What was the most important outcome of the workshop?**

- Fact that group wants to meet again to finalise. Sharing information
- Co-operation between very diverse people.
- To consider the problems of this region with others and be able to laugh.
- Brought into sharp relief the current critical issues and challenges facing the future of region.
- The challenge to thinking amongst those present.
- Made lots of good contacts and friends – learnt heaps. Sense of optimism about the future because Hamilton has some great thinkers.
- To set some guidelines for practical, rural solutions to change.
- The wide variety of issues/events which can affect our region and our ability (or lack of) to cope with it.
- Opening minds to think of implications of (unwelcome) change. Forcing us, to take on board others perspectives but avoid arguments.
- Dialogue about facing the future – the unstable, pessimistic futures and the need for co-ordination of desires for sustainability and social cohesion.
- Realizing the need to commence action now – in many different community areas, to better prepare us for positive outcomes in the future.
- I have thought a fair bit about engineering aspects of change but a summing up statement for the day came from Rob: “It is not about climate change, it is about the human consequences of that change, and how we respond.” Four groups writing ‘movie scripts’ to try and capture this.

## **Scenario thinking follow-up work**

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Soon after the scenario thinking workshop was over, the workshop convenors asked participating local writer Christina Hindhaugh if she could distil some work on future scenarios out of all the workshop notes that had been collected. Christina was asked to use her sensitivities as a writer to identify some compelling future stories that were emerging from work done at the workshop. She, in turn, asked another experienced writer who has recently settled in the district, Louise Le Nay, to help her with this project and they spoke to a range of people who had participated in the different small groups within the broader workshop. Taking advantage of some creative freedom offered to them they produced the ‘context document’ and the framework for four diverse scenario stories that would be set within this context document (a synopsis of the four stories and the context document appear in this report). Christina and Louise then began working on each of the four scenario stories in turn, making sure to interview workshop participants who had created the initial storylines for the selected stories. Christina and Louise have been encouraged to take their time in developing the four scenario stories because the process of consultation required to make each story plausible, yet challenging, is very important.

One of the future stories that has emerged from the scenario thinking workshop focuses on a project that aims to revive local Aboriginal knowledge about caring for the natural environment and local ecosystems. The story has been developed in consultation with local Aboriginal elders and a leader of the local Winda Mara Aboriginal Co-operative, Damein Bell, who has said that they will be able to make good use of the story in promoting their project.

Christina, Louise and Damein Bell were able to share their work on the future scenario stories at the Second International Food and Thought Mela held at the RMIT University Campus in Hamilton in July 2008 and this sparked considerable interest in this way of imaging the future. Once the four scenario stories have been completed they will be collated with the context document and it is intended that the publication will be given a high-profile launch in Hamilton in early 2009. The collection of scenario stories will be circulated to arts organisations in the region to invite responses. The publication will also be sent to school principals and relevant teachers with a request to circulate and discuss the scenario stories with students. The schools will also be invited to work on artistic interpretations of the scenario stories.

At the end of the scenario thinking workshop participants were encouraged to take some of the emerging themes and ideas back into their work and community organisations. Rosie Rowe, from the Western District Health Service, subsequently told the workshop organisers that she had taken concerns and ideas from the workshop into planning meetings within the health service and she reported that this had helped to focus attention on ways of preparing for future health impacts of climate change and similar future challenges. Rosie Rowe has subsequently submitted a proposal for a small research grant from the Hamilton-based Handbury Fellowship program to conduct further research on possible local health impacts of climate change.

The scenario thinking workshop was held at a time when the local government authority, the Southern Grampians Shire Council, was reviewing its existing strategic plan for the years ahead and two of the elected Councillors, including the Deputy Mayor, participated in the workshop. About three months after the workshop, leaders of the Hamilton region Local-Global research project—who had initiated the scenario thinking workshop—met with the two Councillors who reported that the Shire had just agreed on the appointment of a new Chief Executive Officer and its first Environmental Officer. It was agreed that some participants in the scenarios thinking workshop should aim to meet both these people soon after they had settled into their new roles to brief them on workshop outcomes.

Researchers from RMIT University in Melbourne who have been working on the scenario thinking workshop and its follow-up in the Hamilton region are planning to initiate a similar process in an urban local community in Melbourne and in local communities in Papua New Guinea, Vietnam and Sri Lanka. A research grant will be sought to turn this into a three-year comparative study on local responses to climate change within Australia, Papua New Guinea, Vietnam and Sri Lanka.

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- Nadarajah and Donati, 2008

## Appendix 1: Workshop participants

NAME:	ORGANISATION / SECTOR REPRESENTED:	LIVES IN:
ANDERSON Jodie-Ann	Southern Rural Water	
BELL Damein	Winda Mara Aboriginal Corporation	
BERGMANN Iris*	RMIT Uni Melbourne	
CADDEN Bob	Handbury Fellow (Solar Car)	
CHAFFE Rob*	Department of Primary Industries	
COLLITS, Paul	RMIT Uni Hamilton, Regional Development	
COOK Peter (Rev)	Uniting Church Minister/Musician	
COULSON Coralie	Southern Grampians Shire Council Councillor	
DOWNS Lisa	Regional representative	
DUNKLEY Colin	Environmental Business (Nursery), Ex CEO Catchment Board	
FARQUHARSON Bruce	Country Fire Authority (CFA)	
FENTON Cicely*	RMIT Uni Hamilton	
FENTON John (Dr)	Environmentalist and Futurist	
FINCH Vicki*	RMIT Uni Hamilton	
FLEMING Doug (Dr)	Acupuncturist	
GRAHAM John	Department of Primary Industries Hamilton	
HARBISON Cathy	Hamilton Spectator (local newspaper)	
HARROLD Tim	Wannon Water	
HAYES Peter*	RMIT Uni Melbourne	
HINDHAUGH Christina	Writer, Farmer	
JAMES Paul*	RMIT Uni Melbourne	
KIELY John and SHELDEN Darren	Timbercorp	
LANE Helen	10MMM, FutureMakers SouthWest, ACF The Climate Project	
LEARMONTH Pat	Community Representative	
MALSEED Rachel	Publican	
McVICKER Olive	Community Reference Group Member, Ex Teacher, Ex Councillor	
MULLIGAN Martin*	RMIT Uni Melbourne	
NADARAJAH Yaso*	RMIT Uni Melbourne	
NICHOLSON Terrie*	RMIT Uni Hamilton	
O'CONNELL Maria	Recent Migrant from New Guinea	
PIZZEY Sue	Community Reference Group Member, Librarian	
RALSTON David	State Emergency Services (SES)	
ROWE Rosie	Southern Grampians – Glenelg Primary Care Partnership	
SCERRI Andy*	RMIT Uni Melbourne	
SMITH Jodi-Anne*	RMIT Uni Melbourne	
SOSTE Leon*	Department of Primary Industries	
STEPHENS Tom (Dr)	Retired Uni Teacher?	
STEWART Rob	Pastoral & Agriculturalist Society, farmer	
TAN Jay	Recent Migrant, her husband is a GP in Coleraine	
TEMPLETON Howard	Southern Grampians Shire Council Councillor, farmer	
WARNE Judy	Artist and Community Reference Group Member, farmer	
WEATHERLY Richard	Grampians and Futurist (artist and environmentalist), farmer	
WILLEY Maree	Community representative, Eco-Tourism	
WILLIAMS Tony	Primary School Teacher	
ZALCHENDLER Yael*	RMIT Uni Melbourne	

\*These individuals were not participants. They undertook a range of roles required to assist in a successful scenario workshop. For example facilitation of the workshop or of the small groups, taking photographs, video, organising catering, writing notes, observing process, etc).