ARMIDALE Regional Council

ORDINARY MEETING OF COUNCIL

To be held on

Wednesday, 11 December 2019
3pm

at

Guyra Council Chambers

ATTACHMENTS

INDEX

8 RESCISSION MOTIONS

8.1 FOR DECISION: Rescission Motion: Council meeting 27 November 2019 10.2 FOR DECISION: Hydrotherapy Pool - Stronger Country Communities Fund Round 2

Attachment 1: Rescission Motion received - 29 November 2019 3

8.2 FOR DECISION: Rescission Motion - Council meeting 27 November 2019 11.1 FOR DECISION: Response to Climate Emergency Resolution

Attachment 1: Submitted Rescission Motion Item 11.1 from Crs O'Connor, O'Brien and Robinson 4

11 REPORTS FOR DECISION - GROWTH, PROSPERITY AND ECONOMIC DEVELOPMENT

11.1 FOR INFORMATION: Council Cash Position

Attachment 1: Armidale Regional Council Cash Reserves 5

12 REPORTS FOR DECISION - ENVIRONMENT AND INFRASTRUCTURE

12.1 FOR DECISION: Adoption of EcoARC

Attachment 1: Collated amended EcoARC documents 6

Attachment 2: All submissions for EcoARC 29

12.2 Draft Community Participation Plan

Attachment 1: DCP Marked up version 42

Attachment 2: FINAL Draft ARC Community Participation Plan Nov 19 54

14 REPORTS FOR INFORMATION

14.1 FOR INFORMATION: Cash and Investment Report November 2019

Attachment 1: Curve Securities - Term Deposit Report Nov 2019 71

14.2 FOR INFORMATION: Wood Smoke Advisory Group report

Attachment 1: WSAG Report 26sep19 81

17 COMMITTEE REPORTS

17.1 FOR INFORMATION: Minutes of the Audit and Risk Committee meeting held on 19 November 2019

Attachment 1: Minutes - Audit and Risk Committee - 19 November 2019 123

RESCISSION MOTION

We propose to rescind the following motion and propose the motion below.

MOTION

247/19 **Moved Cr Bailey** **Seconded Cr O'Connor**

That a Sub-Committee of five Councillors be formed to urgently look at options to ensure the Hydrotherapy Pool goes ahead as part of the Monckton Aquatic Centre and look at options of an expanded and enlarged gym, Hydrotherapy pool of 25m, and options of outsourcing the management and operation of the complex.

The Amendment being put to the vote was CARRIED.

The Amendment became the Substantive Motion and was CARRIED.

AND SUBSTITUTED WITH:

a) That, based on the limited scope of the proposed hydrotherapy pool funded under the NSW Government's SCCF-2 grant, Council resolves not to proceed with the project in its current form unless additional capital can be sourced, and under the condition that Hunter New England Health agrees to operate the new facility under an extended lease agreement with Armidale Regional Council.

b) That Council, supported by NSW Government departments, commence an expression of interest process to secure sufficient external investment to extend the scope of the SCCF-2 grant, with the aim of developing a commercially viable Regional Hydrotherapy Pool complex (H2) within the Monckton Aquatic Centre.

c) That the expression of interest include options to fund, design, construct and/or operate the H2 Complex on a commercial basis with third parties, under 'arms length' SPV, public-private partnership arrangements, and/or with Government agencies under lease or similar arrangements; and

d) That, should an expression of interest prove unsuccessful in identifying suitable partner(s) for H2, Council undertake a review of the Monckton Aquatic Centre (including asset end of life timeframe and whole of life costs), with a view to generating options for development of a of an indoor heated pool at the Centre, both with and without a Hydrotherapy Pool.

Councillor Diane Gray — **Date** 29/11/19

Brad Widders
Councillor Brad Widders — **Date** 29/11/19

Councillor LIBBY MARTIN — **Date** 29/11/19

RESCISSION MOTION

That Council rescind the resolution for item 11.1 of the ordinary council meeting 27 November 2019 and replace it with dt (a) April not July and ~~(b) delete~~ (c) delete "Endorse" and replace with "Ask the Environmental Sustainability Advisory Committee to review" and (d) delete "have both input and review role" and replace with "is invited to contribute to and advise the working group"

D O'Brien

D Robinson.

Armidale Regional Council Cash Reserves

30/06/2015 to 30/06/2019

$'000	30/06/2015	12/05/2016	30/06/2017	30/06/2018	30/06/2019
External Restrictions					
Unexpended Loans	15,975	14,339	12,164	6,911	3,408
Aged Care Bonds	1,411	1,863	2,010	2,082	
Developer Contributions	1,563	1,678	1,790	1,887	2,387
Unexpended Grants	462	929	11,191	9,358	6,997
Water Fund	14,984	19,140	23,359	24,695	28,070
Sewer Fund	10,122	12,112	13,677	13,922	15,457
Kolora	325	127			
Northern Inland Regional Waste		970	949	981	947
RMS Advance Payment	23	24	142	152	17
Domestic Waste Management	270	270			607
Trust				1,200	1,400
Other	231	396		164	482
Sub Total	**45,366**	**51,848**	**65,282**	**61,352**	**59,772**
Internal Restrictions					
Plant & Vehicle Replacement	1,467		2,240		
Employee Leave Entitlement	2,900	2,900	5,000	2,521	3,194
Carry Over Works	569				2,368
Asset Backlog	714				
Computer Replacement	210				
HACC Services	7				
Sports Council	322				
Swimming Pool	8				
Low Income Housing	29				
Real Estate	1,593				
Bridge Replacement	535				
Kolora	2,166				
Preschool	7				
Kolora Sinking Fund					442
Kolora M&R					150
Airport Capital Works					1,000
Pre School Upgrade					500
Sub Total	**10,527**	**2,900**	**7,240**	**2,521**	**7,654**
Unrestricted Cash	**3,857**	**9,853**	**1,972**	**1,491**	**1,850**
Total Cash	**59,750**	**64,601**	**74,494**	**65,364**	**69,276**

Introduction

Armidale Regional Council has developed its 'greenprint' strategy for environmental sustainability. Entitled EcoARC, the strategy guides Council's own operations and aims to assist groups in the community to improve sustainability in the Armidale region.

EcoARC is a document prepared as part of Council's commitment to the 2017-2027 Community Strategic Plan. It encompasses nine key areas:

- Global
- Air
- Biodiversity
- Future
- Living
- Resilience
- Transport
- Waste
- Water

The development and implementation of EcoARC is central to ensuring the community and Council's environmental priorities will inform the four yearly Delivery Plan and annual Operational planning process. It also highlights opportunities to work with community groups and other organisations to instigate projects or partner in initiatives with common objectives. During the development of EcoARC we have already seen some of those opportunities develop, and we look forward to expanding further strong working partnerships.

The document's scope and objectives are broad, because the means of achieving its goals are likely to grow and change over time. It is not an action plan and so does not have the details expected of an action plan, such as timelines, standards and numerical goals. However, council does recognise that there is an urgency of activity needed on many environmental fronts with the changing climate and current challenges such as water sustainability. As well as environmental conditions, community expectations and interests, opportunities such as partnerships with government programs are also likely to evolve over the lifespan of EcoARC.

The community in the Armidale region is already engaged in many sustainability-based initiatives, and there is a great depth of knowledge, skill and leadership in this area. There is also a great strength of positivity towards the environment and our ability to make constructive change. Council also undertakes a range of sustainability-based initiatives and we are keen to be a good example by actively pursuing better environmental outcomes in both internal operations and by supporting our community's actions. Consultation with the community will be vital to the success of all sustainability projects. We appreciate the community's involvement and feedback in the development of EcoARC and look forward to continuing to work together for a more environmentally sustainable future.

Glossary of terms

ARC	Armidale Regional Council
BASIX	Building Sustainability Index – a NSW government policy to help regulate water and energy efficiency of new and upgraded buildings.
BYOB	Bring your own bottle
DCP	Development Control Plans
EEC	Endangered Ecological Communities
ESD	Ecologically sustainable Development
Garage Sale Trail	A national event promoting secondhand goods and garage sales, supported by local councils and held in October each year
HEPA filters	High-efficiency particulate air filters remove particles from the air whose diameter is greater than or equal to 0.3 µm.
LEP	Local Environment Plans
NABERS rating	National Australian Built Environment Rating System, an initiative of the Australian government to measure and compare the environmental performance of Australian buildings and tenancies.
NBN	National Broadband Network
NSW Container Deposit Scheme	Otherwise known as 'Return and Earn', residents are able to return containers to collection points to receive a 10 cent refund, which can be redeemed at a retail partner store or donated to a charity.
STP	Sewerage Treatment Plant

Global

UN Sustainable Development Goals

Scope and Intent

The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals was adopted by the UN in 2015.

The aim is for governments, businesses and communities, together with the United Nations, to improve the lives of people everywhere. The UN Sustainable Development Goals integrate the three dimensions of sustainable development – the social, economic and environmental. They are:

Everyone is part of the solution to achieve these important, world-changing objectives, from individuals and communities to organisations and governments. Many of the initiatives and practices of Armidale Regional Council and our community already contribute to the achievement of these Goals.

To recognise this ongoing global commitment within our community, this document aligns the UN Goals with council's EcoARC -using the icons above.

Council also has social outcomes it undertakes to achieve and which affiliate with the Sustainable Development Goals. The ARC Community Strategic Plan 2017-2027 supports inclusiveness and the vulnerable members of our community including those with a disability, the elderly, multicultural groups and refugees, youth and Aboriginal communities.

Key Success Indicators

- ~~Identification of~~ Council's and the communities existing actions and policies that contribute towards the achievement of the UN Sustainable Development Goals have been identified.
- ~~Development of~~ aA clear process for recording and updating council's actions and policies which contribute towards the achievement of the UN Sustainable Development Goals has been developed.
- ~~Being~~ Armidale Regional Council has been recognized on a global stage as an organisation that has developed and successfully implemented plans that contribute towards improving the lives of people within our community and beyond.

Strategic Initiatives

- Develop and implement the strategic initiatives for the other EcoARC topics, all of which support the achievement of various UN Sustainable Development Goals.
- Continue to implement the strategic initiatives of the ARC Community Strategic Plan 2017-2027: Our People and Community.
- Identify where council's documents and actions align with the Sustainable Development Goals.

Advocacy and Education

Advocacy

- Develop strong partnerships with state government agencies, community groups, local schools and the University of New England.
- Links to all other EcoARC topics in supporting the achievement of the UN Sustainability Goals.
- Take action for the Goals within council and promote council's achievements as being part of the global community.

Education

- Develop a program with interested stakeholders to assist the community to understanding what it can do – from the individual to groups and organisations – to improve the lives of people.
- Highlight the link between the UN Sustainable Development Goals and local actions when undertaking the education component of all EcoARC topics.
- Encourage individuals to look at the UN Lazy Person's Guide to Saving the World to get inspired to live sustainably every day: www.un.org/sustainabledevelopment/takeaction/

Air

Scope and Intent

Develop and implement a community endorsed Clean Air Plan to reduce the impact of wood smoke on health and air pollution. It would include a comprehensive communications strategy to increase community education about alternative sustainable, clean heating and energy efficient housing options. The plan should help enable residents to make informed choices about how to minimise the health effects of poor air quality on themselves and others.

Key Success Indicators

- Achieve National Air Quality Standards
- Have an informed community that contributes to our goal of clean air in Armidale, and that community surveys show everyone understands the health problems caused by polluted air.
- Have a 10 year plan resulting in healthy and safe air and lower pollution emissions
- Have established partnerships with the NSW Government and other stakeholders to develop and implement strategies and program to improve air quality across the region. This will include:
  - Establishment of a 'whole of government' Clean Air Working Group
  - Development of community discussion papers (based on international research) to assist the community in making decisions around heating and what is current best practice
  - A close working relationship with government for strong and consistent advocacy for clean air
- Recognition on a global stage as a community that has developed and successfully implemented a plan to achieve clean air.

Strategic Initiatives

- Conduct a new survey to determine the community's level of awareness, perception and understanding of the wood smoke issue
- Review the success of previous strategies for, and research into, ~~for~~ air quality improvement both in Armidale and in other cities facing pollution issues to allow Council to focus resources on the actions most likely to be successful and to utilise existing research~~.~~
- Create a database of existing heaters - this is essential to benchmarking current and future use
- Understand the broader economic impacts of adverse air quality to assist in securing necessary funding to support initiatives, including working with NSW Health and others to

use the air pollution monitors to update the estimated health costs of Armidale's wood smoke pollution.

- Based on learnings from all the above points, and a public forum, develop an agreed and community supported ~~strategy~~ Clean Air Plan, for:
  - Appropriate intervention and education
  - Best practice planning controls
  - Reducing illegal firewood collection That once the report and proposed Council strategies are nearing finalisation, ~~that a public forum be held to inform the community and allow for constructive feedback for inclusion~~
- Development of a clear policy and application process to install heating appliances, supported by guidelines on best practice heating, ESD and consideration and consultation with neighbours, and good promotion of the process.
- Investigate increased enforcement and education by designated, trained staff
- Research and apply for funding for projects to improve air quality in the areas of education, conferences, replacement initiatives for wood heaters and regulatory activities.

Advocacy and Education

Advocacy

- As an immediate action, advocate to NSW government for incentives for voluntary replacement of existing wood heaters and installation of best practice heating, together with improving infrastructure of the homes (ie. thermal efficiency), and incentives for landlords.
- Develop a strong partnership with NSW EPA and NSW Health for strong and consistent advocacy for clean air, to provide support and resources address air quality health issues in our city, including stronger legislation to support clean heating.
- Advocate to NSW Government to enhance BASIX and develop requirements for sustainable housing design appropriate for our region.
- Strengthen linkages with other communities facing similar air quality problems.
- Work with government and researchers to enable our community to make informed choices around heating options including alternative clean energy.
- Maintain actions in other Eco~~CO~~ARC to improve clean-green transport, public transport, and cycle ways to support our vision for a liveable and sustainable region.
- Have a "Clean air" conference in conjunction with NSW EPA in Armidale to connect experts with the community.
- Investigate assistance to residents whose health is affected by air pollution, e.g. availability of HEPA filters.

Education

- Develop a comprehensive education program, using affirmative language and including targeted media campaign, around:
  - Monitoring air quality for reliable data
  - The existence and nature of the air quality problem (including setting up a community dashboard for air quality to warn the community when pollution levels are high, so they can choose to avoid outdoor activities and polluted areas~~,~~ and reporting data at highly visible locations for instance on LED screens in Armidale)

  - Good set-up and operation of wood heaters to minimise air quality impacts (including advertising availability of moisture meters, holding a competition to promote good wood storage options, partnering with community groups to hold workshops)
  - Guidance and options for heating which minimise impacts on air quality, including using daytime solar to heat buildings with electrical appliances.
  - Empowering all residents to be proactive in air quality improvement
  - Firewood collection – sourcing good quality wood, implications of illegal collection on biodiversity loss of habitat
  - Improved thermal efficiency of homes – partner with community groups to undertake workshops
- Improve promotion of the requirement for council approval for heater installation, including working with retailers and the EPA
- Secure funding to deliver several demonstration projects on sustainable clean air examples of best practice heating
- Explore the development of a Sustainable House Display Home
- Install at least one purple air monitor in Guyra to help assist in determining whether further investigation of air quality improvements is necessary there.
-

Biodiversity

Scope and Intent

To protect and enhance biodiversity in the region.

Key Success Indicators

- Long term improvement in water quality of our water ways
- Enhanced regional biodiversity

Strategic Initiatives

- Create our next generation of catchment management plans that recognises the importance of healthy riparian zones to biodiversity and safe drinking water
- Through the LEP develop a growth plan for our region that recognises biodiversity and liveability, in consultation with relevant stakeholders
- Include biodiversity and waterway health in the Armidale Regional Plan
- Biodiversity mapping for our region
- List and protect threatened species and communities, and protect and enhance wildlife corridors. Use the new DCP and investigate other planning avenues for achieving this.
- Develop a "Flagship" biodiversity program for the region (e.g. around the koala and the endangered ecological communities on which they rely)
- Work with the Weed Board on new and innovative approach to weeds management in our region

Advocacy and Education

Advocacy

- Understanding biodiversity issues: imperative for catchment and riparian improvement in our region to create healthy and more resilient waterways
- Sustainable design of housing and housing developments
- Protecting and promoting local World Heritage Areas
- ~~D~~Working with stakeholders in developing R&D initiatives relevant to our regions biodiversity issues
- Understanding our role and ability to influence the critical issues of land degradation, soil erosion, land clearing
- Developing and implementing a plan to reduce illegal firewood harvesting
- Maintaining the Biodiversity Super Group to assist in planning and coordinating biodiversity across the region

Education

- Collaborate with others to develop a knowledge hub on biodiversity in our region focused on advocacy imperatives
- Promote and educate the community on sustainable housing solutions

- Encourage participation in urban and rural ecosystem rehabilitation by community and volunteerism
- Initiate a 'Biodiversity and our region' educational schools program
- Undertake further conservation education, especially regarding cats, weeds, and predatory birds. This could be undertaken in partnership with Landcare or other interested parties.
- Promote the use of the AdaptNSW website within Council and the community to reliably inform decision-making with regards to climate changes.

Future

Diverse Economic Development; Sustainable LEP and Policies; Education; Strong Renewable Energy Sector

Scope and Intent

To ensure our region is positive, resilient and prosperous with a diverse economy, sustainable LEP and policies, good education opportunities and a strong renewable energy sector.

Key Success Indicators

- Economic security and diversity that is appropriate for the region.
- Strategic studies fulfilled to support the LEP and good decision making.
- Healthy, environmentally-friendly living, with residents feeling connected to the surrounding environment, special places and activities.
- Services which support a thriving community with appropriate technology available to advance it further, including in education and health (e.g. using the NBN to link local health nodes to major hospitals).
- A community that understands and supports renewable energy and the importance and health benefits of clean air.
- Organisations that employ local skilled people (for example, local consultants) and good connections between organisations to share knowledge and resources.
- Energy needs are supplied locally and sustainably.

Strategic Initiatives

- Integrate sustainability indicators into all Council decision-making processes and operations.
- Investigate funding and human resources for strategic initiatives (e.g. biodiversity study, transport study) to inform planning policies, especially the benefits of clean air, increased active travel, and increased use of renewable energy.
- Provide resources to enable planning policies to be flexible over time, recognising that zoning needs may change with climate change, especially agricultural land and environmentally sensitive land.
- Encourage industries and business activity that helps deliver and protect prosperity and well-being without “costing the earth”.
- Install universal electric vehicle charging ports across the region and investigate other opportunities to support electric vehicle uptake.
- Undertake a business audit to:
    - understand gaps in local needs
    - create opportunities for streamlined local production and value-added industry
    - enable the region to advocate for education opportunities to help fill these needs.

- Strive to provide access to work, and formal and informal training opportunities for people of all ages, abilities, social and health challenges.
- Learn from other councils with comprehensive sustainability agendas to further implement /better progress local initiatives.
- Work with the community and relevant organisations to ~~i~~investigate opportunities for diversifying agriculture with consideration for adaptation to climate change.
- Utilise the economic opportunities of exporting energy as the renewable energy development in the region expands.
- Highlight the economic and cultural attractions of the region to residents and visitors.
- Utilise the tourism and education opportunities of renewable energy projects such as Oven Mountain Pumped Storage and wind farms.
- Facilitate more collaboration between organisations locally to improve the success of projects and their reach.

Advocacy and Education

Advocacy

- Lobby state government to fulfill a demand for particular education needs as they arise (ie. TAFE courses for energy efficiency and the renewable energy industry).
- Encourage developers and designers to seek early engagement with Council planners to allow for opportunities for best outcomes in building and development design
    - Council is a resource that can inform design in a positive, not just restrictive, manner.
    - Encourage more sustainable and 'whole building' design beyond minimum BASIX requirements
    - Encourage early engagement by investigating incentives for good design to indicate that sustainable design is a council priority.
- Advocate to NSW government for tightened BASIX, and to applicants to strive for better-than-minimum standards.
- Advocate to NSW government to implement peer-to-peer electricity trading to enhance financial benefits to the local community and increase uptake of locally produced renewable electricity.

Education

- Increase staff and stakeholder awareness of Council's sustainability commitments.
- Increase accessibility to good design and energy advice (ie. Council website, community activities such as Sustainable House Open Day).
- Promote renewable energy educational activities such as wind farm open days.

Living

Renewable Energy; Local Food; Sustainable Living; Smart, Efficient Towns

Scope and Intent

A healthy environment is crucial to economic and social sustainability. To reduce our environmental footprint whilst maintaining our lifestyle, future technology and energy use must be efficient, environmentally friendly, and support our health & wellbeing. This includes transport, food production and distribution, and comfortable living.

Key Success Indicators

- The community can participate in initiatives that contribute to a sustainable lifestyle.
- The community's desire for clean, resilient energy is fulfilled.
- The region maintains viable sustainably-run small and family farms.
- Council and other organisations procure local products where possible.
- Council's planning system supports the appropriate use of rural land across the municipality.
- Council is recognised as a climate and greenhouse-gas responsible organisation.
- There is an increased connection between agriculture and rural and urban centres through an engaged and supported community, and an increased appreciation of our surroundings and natural environment.
- Residents enjoy living in the region and are able to gain local employment or telecommute.
- Transport links are retained or improved.
- Residents commonly walk or cycle to work, school, college or university.
- There are diverse and healthy recreational, and creative social, opportunities.
- There are opportunities for residents to engage in protecting and restoring environmental values.
- Community organisations, schools and businesses provide a range of essential services, opportunities for friendship, and support, including in times of emergency.

Strategic Initiatives

- Environmental and Sustainability risk assessments are undertaken for all major Council projects.
- Participate with UNE in Project Zero30 which aims to move the Armidale local government area to zero emissions by achieving National Carbon Offset Standard certification by 2030.
- ~~All Council buildings and facilities to achieve and maintain an appropriate sustainability rating (such as NABERS or Green Star) or achieve best practice in sustainability~~

- ~~Energy consumption from key Council buildings and activities is reduced by 20% compared to the 2017/2018 baseline by 2027 (subject to confirmation from the baseline that is established)~~
- ~~At least 25% of electricity is generated and/or purchased from renewable sources by 2027~~
- ~~Offsetting residual greenhouse gas emissions to become carbon neutral by 2027~~
- ~~Establish requirements for procuring low-pollution energy efficient vehicles and equipment~~
- ~~Ensure that employees are given the opportunity to be exposed to new ideas and sustainability information.~~

- ~~Revise the Bicycle Plan to improve safety and set targets for increased walking and cycling.~~ (already contained in TransportARC)
- Work with the community to implement short, medium and long term climate actions following the declaration of the Climate Emergency
- Adopt a Sustainable Procurement Policy to guide Council's purchasing decisions.
- Priorities are set for upgrades and maintenance of local roads, buildings, parks, playgrounds, sporting facilities, swimming pools, bike tracks and community gardens that have sustainability design objectives and outcomes.
- Work with community groups to i~~I~~nvestigate reinvigorating the Sustainable Living Expo to promote, encourage and demonstrate local capabilities and initiatives.
- Support for and promotion of local food
  - Encourage use of 'local food' labelling to indicate the proximity of food origin
  - Encourage seasonal selection of ingredients by residents and local food outlets
  - Promote products of local 'mid-size' farmers to avoid sending local food to city markets
  - Support a mobile abattoir
  - Land use plans support opportunities for food production.
- Increase the number of developments that include an affordable, sustainable housing component and encourage active transport.
- Set higher standards for new buildings in specified 'innovation zones'.
- Investigate programs to support energy efficiency and installing renewable sources of energy amongst residents and businesses.

Advocacy and Education

Advocacy

- Council is a role model in the local community for energy use and encourages and supports energy efficiency in the broader community
- Promote the local landscape and natural attractions while considering potential impacts on the environment and ways to mitigate such impacts.
- Promote use of mechanisms such as wood smoke filters and HEPA filters in winter to improve air quality and the health of our community.
- Advocate for better train links between Armidale and Sydney (fast or overnight), competitively priced flights and bus links between capital cities and other local and regional towns.

- Support community events that promote sustainable living such as the Armidale Farmers Market, Sustainable Living Armidale events and revegetation activities.

Education

- ARC applies some of the recommendations of the *Australian Energy Efficiency Policy Handbook (produced by the Energy Efficiency Council of Australia*), such as
    - Raising awareness about the benefits of energy efficient buildings
    - Advocating to the NSW government to tighten BASIX in NSW and move towards a nationally consistent standards regime.
- Together with interested residents, pPromote and encourage the reduction of energy use and greenhouse gas emissions by the community and industry in the region.
- Increase awareness and issue a sustainable home checklist to all residents to reduce running costs whilst improving the environment.
- Increased engagement between rural and urban areas through Council-led or supported activities such as farmers markets, barbeques, land care activities etc.
- Promote community gardens and encourage their use, and liaise with community groups to provide localised information on home food production.
- Support consumer education and market development of locally produced food.
- Better communication of positive local stories to inform the community of initiatives in our area.

Resilience

Plan for Climate Change; Diversity in Agriculture and Horticulture; Resilient Assets

Scope and Intent

Climate change impacts will be experienced at regional and local levels. Councils can play a key role in managing these risks.

Adaptation and mitigation are complementary strategies to reduce and manage the risks. Mitigation seeks to reduce net emissions to limit climate change, while adaptation helps individuals, communities, organisations and natural systems deal with the consequences of climate change that cannot be avoided.

Policies and practices in relation to climate change mitigation and adaptation which target both Council operations and services to the community can be adopted.

Key Success Indicators

- Substantially reduced total and per-capita greenhouse gas emissions
- A Climate Change Risk Assessment, Mitigation and Adaptation Plan for the whole ARC area is developed and all extreme and high level risks are identified and addressed.
- The agricultural sector is growing, diversified, resilient and supports a more self-sustaining Armidale Region.
- ~~A diversified~~ The economy is diversified through management of resources.
- Biodiversity values are enhanced and the loss of biodiversity is reduced.
- The community is well-informed and engaged in adaptation and mitigation actions.
- Climate change impact on the community is reduced.

Strategic Initiatives

- ~~E~~Work with individuals and community groups to encourage sustainable land management practices to protect water, environment and heritage and control pest species.
- Protect agricultural land from urban encroachment and fragmentation, including utilising existing developed land more efficiently to protect agriculture and habitat/wildlife corridors.
- Develop Mitigation and Adaptation Plans for natural hazards and climate change.
- Identify and manage risks to Council-managed natural land
    - Increase and improve the extent and condition of native vegetation including wildlife corridors and urban riparian and bush lands.
    - Continue weed management, erosion remediation and improved habitat linkages at landscape scale.
    - Improve the effectiveness of Council's and community effort toward environmental rehabilitation through improved integration, collaboration and greater knowledge transfer between councils and stakeholders. Work in partnership with land and catchment agencies, organisations and private landowners

- Identify and manage risks to Council-owned assets and facilities and undertake and promote mitigation actions where possible (such as energy efficiency and use of renewable energy, including demonstrating of the savings that can be achieved by switching to efficient, low-cost renewable energy)
- Support energy efficiency in energy generation, planning and building design to prepare for climate change, decrease demand and create jobs.
- Expand and review partnership programs to support vulnerable households
- ~~M~~Work with the community and organisations to minimise the impacts of climate change on socially and economically disadvantaged communities through social impact investment for actions such as upgrading homes, community facilities and infrastructure
- Utilise tools such as CSIRO's AdaptNRM tool (which provides support for natural resource managers to develop climate-ready plans), and the AdaptWater tool (which quantifies the risk associated with climate change and extreme weather events to water utility assets) to inform planning and investment decisions.

Advocacy and Education

Advocacy

- Build partnerships with the University of New England to create research funding opportunities, particularly involving climate adaptation (e.g. new crop varieties and animal breeds, efficient irrigation, flexible farm management, food and storage preservation facilities).
- Build capacity in Council, and partner with knowledgeable individuals and groups to provide advice to the community on energy efficiency~~.~~
- Investigate and advocate building technologies suitable for this region, such as materials, improved insulation and heating/cooling.
- Establish facilitation teams in local government peak bodies to advise on upgrading facilities and assets.

Education

- Work with stakeholders to provide workshops to help build resilience in the community (ie. Coping with Extreme Heat Seniors workshops - an opportunity to build resilience to extreme weather among a demographic known to be more vulnerable to such impacts)
- Promotion of activities individuals can undertake for both mitigation and adaptation through Council's communication channels and activities such as festivals.
- Support local community groups undertaking climate change education and activities to improve residents' wellbeing.

Transport

Scope and Intent

To consider the current transport situation within our region, investigate future needs and facilitate sustainable transport options that create less pollution and use fewer resources. Carbon emissions from transport are increasing, particularly for private passenger vehicles, and there is an urgent need to reverse this trend.

To embrace initiatives that promote the use of sustainable transport within and between towns and villages, and in travelling to and from the region.

Key Success Indicators

- Adoption of a region-wide transport plan considering priorities and advocacy for improved public transport and encourages active transport (cycling/walking)
- Improved transport infrastructure (lights, pathways, roads, signage)
- Reduction of single-driver car journeys and greenhouse gas emissions from transport
- Increase in cycling, walking and use of public transport
- Integrated cycle-friendly routes and walking paths that are safe and movement-friendly and identified by appropriate signs and logos
- Health and wellbeing improved (health benefits of walking and cycle commuting)

Strategic Initiatives

- Increase use of public transport by:
  - Supporting improved bus services (eg. ongoing bus shelter maintenance) and investigating the co-ordination of multiuse transport: school/public /aged care etc.
  - Considering the results of the autonomous vehicle trial and its potential to enhance transport options.
  - Ensuring employment generators (eg. Guyra tomato farm, industrial precincts) and airport have options for public transport and motor pooling.
  - Advocating for improved rail services, , especially fast or overnight trains to Sydney.
- Work with the community to d~~D~~evelop a Disability Action Plan and Pedestrian and Mobility Plan to improve access to services and infrastructure for the aged and people living with a disability.
- Undertake an overall bicycle strategy for all aspects of cycling for transport within the LGA, including a safe, connected network and attractive bicycle parking, in consultation with community groups.
- Use community events to promote sustainable transport use (ie. NSW Bike week and Tour de Rocks to promote cycle commuting, community bus to provide transport to events).
- Revise LEPs to encourage residential development within easy cycling and walking distance of major employment and business areas, , and facilitate residential living within the CBD of Armidale
- Ensure sustainable transport is part of the Armidale Regional Plan.
- Improve traffic management and analyse injury statistics to improve safety.
- Implement vehicle sharing- or fee-for-service transport options, specifically for older people in the local area

- Promote car pooling and provide incentives and support such as designated car pooling spaces.
- Create opportunities for other uses of car parking areas (for example, creating a greater concentration of urban activities in the CBD).
- Provide suitable bicycle parking.
- Provide recharge points for electric cars.
- ~~Consider~~ Investigate the transition of ARC car fleet to low emission vehicles such as electric, cng/h2 and/or hybrid vehicles and small vehicles.

Advocacy and Education

- Increase awareness that carbon emissions from transport are increasing, particularly for private passenger vehicles, and there is an urgent need to reverse this trend.
- Promotion and marketing of public transport services to increase use.
- Increase awareness ~~awareness o~~f the health benefits of cycling and walking.
- Encourage our community to make sustainable personal transport decisions and lead by example.
- Raise driver awareness of cyclists and pedestrians, including signage, and improved provision of suitable bike parking
- Ensure we work closely with the community, health organizations interested in promoting cycling and walking, and businesses to gather feedback, optimise funding opportunities and maximise improvements.
- Promotion of new and sustainable transport options to increase their visibility within the community and knowledge of alternatives (eg. electric cars).
- Promote offsetting carbon emissions associated with travel.
- Report on council's performance in achieving strategic initiatives.

Waste

Scope and Intent

Armidale Regional Council has a commendable waste service for residents and the residential waste diversion rate is recognised amongst other municipalities.

The scope is to continue to improve recycling rates, waste reduction targets and community knowledge of local waste issues, together with a specific commitment to addressing construction and demolition, commercial and industrial wastes.

The intent is to:

- Use the hierarchy: **reduce.reuse.recycle.recover**
- Improve the statistics for general waste reduction.

Key Success Indicators

- ~~Development of a~~A -regional waste strategy has been developed
- ~~Monitoring and reporting of w~~Waste is monitored and reported on a yearly basis
- The ~~A~~ whole ~~of~~ community is engaged ~~engagement~~ in recycling waste, including commercial and industrial premises, schools, hospitals, government facilities, ~~including~~ and has increased knowledge of composting organic waste
- Increased recycling rates to 70% for municipal solid waste, 70% for commercial and industrial waste, 80% for construction and demolition waste by 2021 (NSW 2014-2021 Waste and Resource Recovery Strategy)
- Council matches community performance through waste minimisation, procurement of more recyclable materials and introduction of recycling initiatives. (Implement as part of rolling out Resource Efficiency staff engagement measures.)
- A r~~R~~eduction in the use of skip bins, which allow no separation of waste for recycling
- A r~~R~~eduction in solid waste contamination (eg asbestos, lead paint).

Strategic Initiatives

- ARC to establish a baseline of waste generated and diversion rates for Council's facilities and activities.
- Social enterprise opportunities (eg. Ascent - cardboard, commercial and industrial; badging City to Soil logo)
- Council to continue its regulatory role in relation to waste management, including issuing of penalties
- Ensure planning controls enable new developments have sufficient space and access set aside for recycling bins.
- Prioritise investigation of local recycling/remanufacturing plants, and potential local reuse of the materials and products

Reduce

- Develop waste reduction targets and recommendations for improvement (eg. for kerbside services, Council offices, businesses and industry)

- Develop a Council purchasing policy that promotes and supports products with low waste profiles, including electronics
- Engage businesses in waste reduction practices, by encouraging increased participation, investigating incentives, and leveraging consumer demand for more sustainable practices
- Measure, identify and reduce the amount of construction waste streams going into landfill and implement behaviour changing practices.

Reuse

- Create incentives for businesses that can 'upcycle' waste into products to be located locally.

Recycle

- Provide recycling points and services at key public facilities such as the Mall, shopping centres, libraries, sporting facilities and public events (polling points, festivals)
- Continue to service and promote recycling facilities throughout the council area
- Continue recycling or ensuring safe disposal of e-waste, light bulbs and fluorescent tubes
- Investigate user pays for unseparated waste (create incentives to recycle – the cost must be prohibitive for disposing of unseparated waste however not too high that people will illegally dump / bury) and price incentives (especially commercial and industrial businesses) - eg. environment levy to fund recycling bins/reduce costs to businesses.

Recover

- Continue to encourage the sale and donation of old equipment, furniture and fittings that are still in good condition through the second hand shop at the transfer station and other venues in the local government area.

Advocacy and Education

Advocacy

- Support local organisations who undertake waste education and advocacy with enthusiasm and skill
- Build upon an ARC and State Government partnership to utilise funding opportunities , for example:
  - the Waste and Environment Levy
  - the Waste Less, Recycle More 2017-21 Extension, which will continue to provide funding to support new or enhanced household kerbside collection services for garden, food or combined food and garden organic waste
- Engage with industry, particularly construction, and increase support for programs which increase reuse and separation of recyclable waste

Education

- Continue to work with Northern Inland Regional Waste, particularly on education programs
- Provide more information on Council's website, intranet, newsletter and annual report on the breakdown of waste and recycling collected through kerbside services and from Council offices - updates, newsletters, annual report
- Specific education about reducing and recycling e-waste, as it is the fastest growing waste sector
- Conduct visual and full waste audits Council waste on a yearly basis and publish results
- Make public recycling stations common, visible and easy to use and consider incentives
- Continue to provide specific educational programs on waste reduction and recycling (including reduce.reuse.recycle.recover and Bring Your Own Bottle-BYOB) and support these programs with increased recycling services across the council area
- Continue to promote the reuse of second hand goods and events such as the Garage Sale Trail

- ARC provide a good role model of good waste practices within its facilities and at community events
- Promote use of the NSW container deposit scheme.

Water

Scope and Intent

Sustainable use of water is vital for our regional environment, our community health, our lifestyle and our regional economy. The scope is to deliver initiatives that enhance the sustainable use of water in our region including:

- A focus on more sustainable domestic and business urban water efficiency , including the use of rainwater tanks, greywater and water efficient fittings.
- Improving our drinking water catchments to protect our drinking water and enhance biodiversity
- Improving waterway health by targeted improvement to stormwater management and sewage treatment
- ~~A focus on more sustainable urban water management to ensure the community uses water wisely~~
- Better managing water to become a water sensitive city thereby reducing flooding, reducing our impact on the environment and enhancing aesthetics.

Key Success Indicators

- To have healthy catchments which enable sourcing of good quality water for our community's needs.
- To have implemented best practice sensitive urban water design for new dwellings and a have a water wise community.
- To reduce our impact on waterways in our region particularly downstream of urban areas by having in place effective sewage collection and treatment and stormwater management.
- To meet our obligations in terms of ~~meeting~~ environmental objectives for sewage treatment.

Strategic Initiatives

- Develop a long term catchment management plan for the Malpas and Guyra Dams catchments, to protect our source water.
- To secure funding to deliver on improved catchment management.
- To upgrade the Armidale STP to enhance reliability, enhance treatment and improve the ongoing sustainability of plant and effluent reuse operations.
- To develop and promote water sensitive urban design principles in our region that values water, improves water quality and retains as much water as possible within its natural catchment.
- Work with enthusiastic stakeholders to protect and improve riparian vegetation and wetland habitats to decrease evaporative loss.
- To ensure we are a water SMART community by developing a Smart plan of how we best use urban water in a Smart city.

- To review BASIX and make recommendation on the most appropriate urban water management policies for our region and the sustainable use of water.
- To ensure we have best proactive stormwater management in place to protect our downstream aquatic environment.
- Understand how we can better management stormwater in a water sensitive city to reduce flooding, reduce impact on the environment and enhance aesthetics.
- Encourage installation of greywater systems for new dwellings in the revised DCP.

Advocacy and Education

Advocacy

- Develop a compelling case for action in catchment management to protect our source water for our region.
- Ensure ARC works closely with the community on smart and sustainable urban water use.
- Encourage cooperation in riparian ecosystem rehabilitation between agencies and community.
- ~~Advocate with~~ Continue to communicate to Government that BASIX is not driving the best and most sustainable urban water outcomes for our community.

Education

- Work with knowledgeable residents to ~~E~~ncourage the community and industry to be water smart, and continue community education about water wastage and water efficiency.
- Apply and promote water sensitive urban and building design that improves how we use water, enhances water quality and retains as much water as possible within its natural catchment.

[redacted]

With only a superficial scan I felt that the document should acknowledge the extraordinary pool of talents and strength of positive attitudes towards the environment that are available in the community served by the Council.
I suggest you acknowledge the strengths of the community and WRITE IN consultation with the community on every aspect of the plan.
Regards

[redacted]

1

[redacted]

16th May 2019

Attention

Sally Thorsteinsson
Sustainability Officer
Armidale Regional Council

Comments on EcoARC, Council's Greenprint for sustainability

The strategy is very comprehensive and colourful with appropriate wording and jargon – this makes some of it rather incomprehensible to the layman who may be unfamiliar with the acronyms used. We were disappointed that there were not more definite tactics outlined.

Air: Working on decreasing use of wood burning heaters is critical to cleaning up our environment. This requires a lot of education and regulation to the point of banning their use in new buildings and penalising continued use in existing buildings with incentives to change to more appropriate means of heating. It is also important for maintaining diversity and to the sustainability of our environment that dead timber is allowed to remain in our paddocks/bush.

Biodiversity: Armidale has a very limited range of bird species, being overrun with Currawongs which prey on our smaller native birds. This is largely due to the planting of berry carrying bushes in previous years which provide excessive food. This has allowed breeding to large numbers and also encourages the Currawongs to overwinter in the area. This situation will continue to worsen with the warming associated with Climate Change. There needs to be education, and incentives for the community to destroy these berry plants and to replace them with native plants more suited to our native bird populations. Appropriate vegetation could be a requirement in new developments and Council can lead the way by improving the public spaces.

The public also needs to be made aware that the feeding of any of our major predatory birds, Currawongs, Kookaburras, Butcher Birds, either deliberately or by carelessness is devastating for our smaller birds.

Another critical factor is the depredations caused by the free roaming cats which prey on our birds and other fauna. Cats make wonderful pets but they must be confined to indoors or to constructed play areas in the garden. There are several fine examples on these on

private property in Armidale. There are a number of centres in Australia and in New Zealand which have made it illegal to allow your cat to roam free, and this edict is also supported by PETA. Armidale should make a stand.

Living: This as written has many (15) laudable goals, but no indication of any plans for their achievement. As such it weakens any credibility that anything will be done. Could you condense these to 3 or 4 concrete aims each with some simple dot points about what you ARE GOING TO DO in the next 12 months.

Waste: Armidale has a good system for the sorting and collection of waste. The next step needed is a Processing Plant to utilise this waste, and that from other regional centres. This should be a priority for the newly developing Industrial Area.

Water: There seems to have been a lot of complacency about our water supply and now suddenly we have severe water restrictions.

We need to encourage householders to have water tanks and to utilise their greywater for gardens. New dwellings could be obliged to have these facilities. New developments could be forced to set up communal areas for rain water and grey water collection and availability. This has been done elsewhere. There could be penalties for sporting clubs who allow irrigation of fields to continue until and after surrounding areas are water logged with runoff. Council should set an example.

[redacted] on the draft EcoARC - [redacted]t strategy

Adding supporting information (from readily-available sources) such as costs and benefits to determine priorities for action would make this a much more powerful document

We applaud council's efforts to become sustainable, and hope the suggestions below, e.g. adding readily-available estimates of costs and benefits to determine priorities for action, will allow the greatest possible benefits to be achieved for the resources that are available.

The preamble explains that the GreenPrint's scope and objectives are broad, because the ways we can achieve the stated goals are likely to grow and change over time.

Nonetheless, plans such as the GreenPrint need priorities, to enable the greatest benefits to be achieved for the least effort and cost. Information on costs and benefits is important to help determine the priorities for action that yield the greatest dividends. This document will be much more powerful if the strategies with the greatest environmental and community benefits can be identified to help everyone understand the benefits and costs of each strategy.

The inclusion of readily-available information such as the estimated health benefits of cycling would be useful. For example, in 2013, an Australian Government Discussion paper: 'Walking, Riding and Access to Public Transport' reviewed the benefits of cycling and concluded: "*the net health benefit (adjusted for injury) for each kilometre cycled is 75 cents – about half of the total economic benefits of a typical bikeway project*". Including such information in the GreenPrint also helps council secure funding for important environmental initiatives.

Information on costs and benefits is also important for air quality, because of the estimated cost of over $4,000 per wood heater per year in Armidale[1] and because a substantial proportion of visits to GPs in Armidale for respiratory complaints in winter are related to woodsmoke pollution, with estimated health costs in 2007 of $1666 per day (perhaps $300,000 a year at today's prices) just for the cost of visits to GPs in Armidale[2].

Justification, e.g. legislated requirement to follow the principles of ecologically sustainable development, would also make the GreenPrint more powerful

Under s.89(1)(c) of the Local Government Act 1993 - http://www5.austlii.edu.au/au/legis/nsw/consol_act/lga1993182/s89.html councils must take into consideration the principles of ecologically sustainable development, and **the protection of public health, safety and convenience**.

In other documents, ARC explains that these principles include:
a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for delay
b) inter-generational equity—namely, that the present generation should ensure the health, diversity & productivity of the environment is maintained or enhanced for future generations and
(i) polluter pays—those who generate pollution and waste should bear the cost of containment, avoidance or abatement

Readily available information to add to the GreenPrint

1) Net health benefit (adjusted for injury) of 75 cents for each kilometre cycled – see above
2) Estimated health costs of air pollution – over $4,000 per wood heater per year in Armidale[1] plus a substantial proportion of visits to GPs in Armidale for respiratory complaints in winter – see above
3) Estimated costs (including environmental costs) of water, waste and energy.

Important changes needed to improve the GreenPrint

1) **Current water charges** do not appear to reflect the environmental cost, or what is needed to send a powerful message to the community to conserve water and reduce the risk of council having to truck water to Guyra if the supply runs out before the pipeline has been constructed. The best time to review charges is when there is a need to conserve water, as is the case at the moment. At such times, the community is more likely to understand and support pricing structures that recognise and encourage conservation.
2) Similarly, **the Clean Air for Armidale strategy does not include the estimated health cost of installing new heaters,** nor the majority opinion of the submissions made in response to the public exhibition of the draft policy that the test results for new heaters bears little or no relationship to real-life emissions. Current policies make no more sense than endorsing pollution from VW's diesel vehicles fitted with cheat devices, because they could pass the required test, even though the results did not reflect real-life emissions.

Other details/suggestions for improvement

Sustainable Water Quality

The strategy claims to have "*A focus on more sustainable urban water management to ensure the community uses water wisely*". Yet the best way to achieve this outcome would be to review the charging system and increase charges for water consumption, while reducing the charge for being connected to the pipes. The best time for such a review is when there is a need to conserve water. At such times, the community is more likely to understand and support pricing structures that recognise and encourage conservation.

Key Success Indicators

"*To work with the community to ensure they use best practice sensitive urban water design for new dwellings and are a water wise community in terms of everyday use.*"

Working with the community is a strategy rather than a success indicator. More importantly, under ARC's current water charges, it seems likely that the cost to new dwellings would be far greater than the savings in water consumption. If ARC doesn't count the costs of water shortages in its charges, it seems unfair to ask new home owners to bear additional costs. A voluntary measure without appropriate price signals risks being an ineffective strategy that costs more in staff time than the likely benefits.

Low, zero, or negative benefits to residents of making homes water efficient (despite large costs in times of drought borne by council, not residents) should be contrasted with the large benefits to residents of making new dwellings energy efficient, which saves residents several hundred dollars a year and makes houses more comfortable.

Unless the GreenPrint acknowledges costs vs benefits and informs the community that making dwellings energy efficient in our climate will save a great deal of money, but making them water efficient is likely to cost more money in home loan repayments than saved by the improved water efficiency, the GreenPrint will have the undesirable outcome of increasing the cost of living for residents, while not achieving the best environmental outcomes for our region.

This could, of course, be changed by reviewing water charges while level 3 or higher water restrictions are in place to encourage residents to reduce water consumption. The ambiguity of the current messaging suggests that council isn't committed to encouraging people to use less water.

Education

Education should present basic facts to the community – e.g. how much residents might save by being water smart and energy smart, and which measures might be worthwhile, ideally based on the water use of a range of typical households. Householders contemplating a new dwelling could then be encouraged to look at water and energy uses in their current dwelling, and consider what savings could be achieved by making the new home more efficient.

Waste

Key Success Indicators

Apart from aiming to increase recycling rates to 70-80% by 2021, the success indicators do not appear to reflect success. It would therefore be more appropriate to list them as strategies. More information is also needed to determine the utility of the proposed strategies, e.g. information on current recycling rates should be provided, as well as the estimated costs (including environmental costs) vs benefits of the different options.

Biodiversity

Key Success Indicators

A successful regional offsets program could rightly be considered a success indicator. However, experience with offset programs elsewhere has shown implementation is often problematic because they can allow habitat to be destroyed in return for promises to preserve vegetation that was not under threat and would have been preserved anyway, or vegetation that is not comparable to what was destroyed. Strategies are required to prevent abuse of offset provisions.

Transport

Key Success Indicator

Additional information would greatly enhance the key success indicators. Instead of simply expressing a desire for increased cycling and walking, council could provide information on current and desired levels?

Additional Strategy: Consider how the Tablelands Community Transport or other organisations could help coordinate volunteer or fee-for-service transport for older people in the local area.

Clean air for Armidale

Key Success Indicators

There are only two relevant indicators of success:

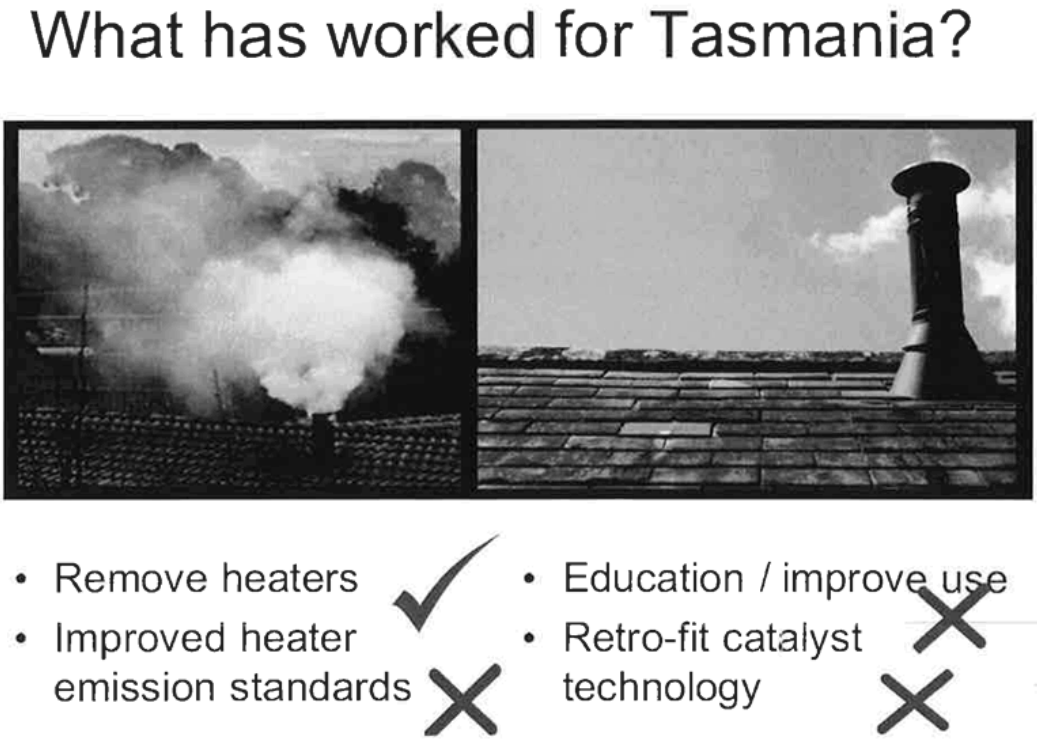
1) that air pollution measurements throughout the town are below the level (4 ug/m^3 according to a recent Tasmanian study of wood smoke [3]) at which adverse health effects have been observed.

2) that community surveys show everyone understands the health problems caused by polluted air, including the increased risk of heart attacks, strokes, dementia, cancers, lung diseases and effects on unborn babies and young children.

It would be more appropriate to list everything else as strategic initiatives

Strategic Initiatives

- Develop wood heater policies designed to protect public health and conform to the principles of ecologically sustainable development, as required under s.89(1)(c) of the Local Government Act 1993.
- Develop wood heater policies that protect the health of people living nearby. Some people (e.g. those with heart and lung diseases) are at much greater risk than others. The risk starts to increase whenever the daily pollution exceeds 4 ug/m^3, only a tiny fraction of the current Australian standard of 25 ug/m^3. It is unreasonable that residents be forced to move out of town, or away from Armidale, because of the impact of air pollution on their health; other solutions must be investigated.
- Develop education material to help the community understand the health damage and costs of wood smoke pollution, including increased risk of heart attacks, strokes, dementia, cancers, lung diseases and effects on unborn babies and young children
- Use the Purple Air Monitoring Network to warn the community when pollution levels are high, so that they can choose to avoid outdoor activities and polluted areas
- A review of what makes a successful woodsmoke reduction program concluded that the only effective strategy is to encourage residents to switch to non-polluting heating. This was based on the fact that providing Smart Burn catalysts to 80% of wood heater users in one town did not improve objective measures of air pollution, on the fact that new heaters are almost as polluting as existing models, and that education on how to operate heaters corrects has proved time and time again to be ineffective. This suggests that the above are not cost-effective strategies.[4] The only documented effective program (summarised by Dr Fay Johnston in the graphic below, used in several of her presentations) was in Launceston. That program created overwhelming public support for clean, healthy air, with more than half of all residents choosing to replace wood heaters with non-polluting heating, over half of them entirely at their own expense. The result was a 28% reduction in deaths in winter from respiratory disease a 20% reduction in cardiovascular disease deaths.[5] How much would Armidale residents value such improvements in their health?



- Develop a close working relationship with government for strong and consistent advocacy for clean air, while recognising that state and federal governments consider local governments to be response for woodsmoke pollution

- Create partnerships with the NSW Government and other stakeholders to develop and implement strategies to improve air quality across the region

Further information

1. Robinson, D.L., J.M. Monro, and E.A. Campbell, *Spatial variability and population exposure to PM2.5 pollution from woodsmoke in a New South Wales country town.* Atmospheric Environment, 2007. **41**: p. 5464–5478.
2. Khan, L., K. Parton, and H. Doran, *Cost of Particulate Air Pollution in Armidale: A Clinical Event Survey.* Environmental Health, 2007. **7**(2): p. 11-21.
3. Huynh, Q.L., et al., *Association of ambient particulate matter with heart failure incidence and all-cause readmissions in Tasmania: an observational study.* BMJ Open, 2018. **8**(5).
4. Johnston, O., D.F.J.D.J. Todd, and G. Williamson. *Community-wide distribution of a catalytic device for domestic wood combustion to reduce winter ambient PM2.5 mass concentrations*. in *CASANZ2015 Conference, Melbourne, 20-23 September 2015*. 2015.
5. UTAS. *Reduction in air pollution from wood heaters associated with reduced risk of death. University of Tasmania media release.* . 2013; Available from: http://www.media.utas.edu.au/general-news/all-news/reduction-in-air-pollution-from-wood-heaters-associated-with-reduced-risk-of-death.

[redacted]

[redacted]t for Sustainability

I would like to comment on the EcoARC GreenPrint strategy plan, in particular the section concerning air quality for the Armidale region. I think air quality is a very important issue not just for Armidale - just drive through Guyra on a winter evening. Friends who have left Armidale always remark on how bad the air quality used to be, and ask if it has improved. The only answer to this is no, and probably it is worse. Indeed, a leading lung specialist advised people to move out of Armidale for their health. Unfortunately we didn't, trying instead futilely to improve air quality, to the detriment of our own health.

There is general consensus among environmental, health and scientific organisations around the world on the adverse health effects of fine particle pollution and woodsmoke specifically. The main conclusion is there is no safe level.
It is indicative of how bad the air quality is when the objective of the strategy is just to meet national air quality standards. We should have much better air quality than in the cities. There is no timeline given to even achieve the nation air quality standards. Nor are the standards actually specified nor what our current air quality measurements are.

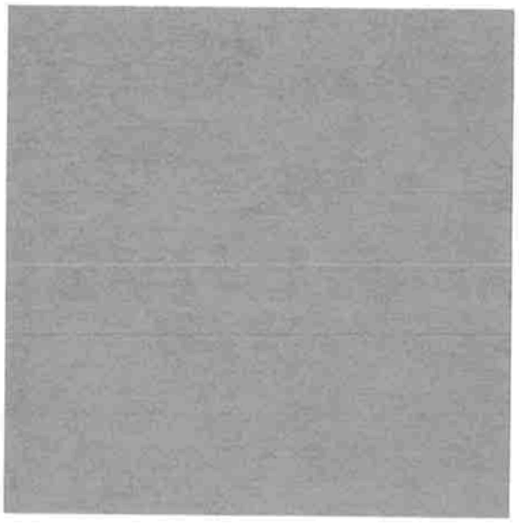
There are very few actual details of what the strategy entails. Remember we have been working on reducing woodsmoke from at least 1996. It is not new. We have lots of information on air quality measurements, and local and global research on the health effects from woodsmoke. A 10 year plan is mentioned: what is the goal for year 1, year 2, etc? There needs to be some specific actions outlined, instead of the usual general statements which will just be ignored. If we want to be recognised 'on a global stage as a community that has developed and successfully implemented a plan to achieve clean air', then there needs to be more committment to some concrete actions and priorities.
There should be a clear statement in the strategy that woodheating is not sustainable in terms of achieving good air quality, and is not recommended as a clean heating choice. There is no way anyone should be installing a woodheater in a new house, given the impact on local air quality from the toxic emissions, and the global warming impact of the greenhouse gases released, when wood is burned.

A study in Tasmania showed that the risk of hospital admissions for heart attacks increases when wood smoke concentrations exceed 4 ug/m3. Real-life emissions from even a single new wood heaters often increase PM2.5 pollution exposure of people living nearby above this limit and so create unacceptable risks to health. The "Growing up in New Zealand" study found that every additional modern woodstove per hectare increased by 7% the risk children under 3 would need hospital emergency treatment. In Armidale woodsmoke pollution has a significant impact on health and was estimated to cause 38% of visits to GP for respiratory complaints in winter. Therefore the strategy also needs to encourage the removal of woodheaters to reduce the density of local pollution sources.

Mentioning the adverse health effects of woodsmoke specifically in the greenprint would attach more significance as what the strategy is trying to acheive. Woodsmoke has been linked to respiratory illness, asthma, lung cancer, heart condtions, strokes, dementia, immune system disorders and more. The ARC should advise regulatory bodies that a health warning is attached to every new woodheater, and include the warning with applications to install them. Monsanto has been sued for not having cancer warnings on their products.

We don't need a policy to spend another 10 years researching and discussing the air quality issues. We need a policy which aims to move the Armidale region to a cleaner energy future as soon as possible. There is no sense of urgency in the greenprint. It starts off quoting the UN sustainable development goals. The UN has

more recently given a stark warning that we must act on climate change now to limit a climate disaster within only 11 years. Several Councils around the world have declared a Climate Emergency in response. I agree that ARC should also declare a Climate Emergency and update the 'greenprint' accordingly. Using more clean energy and improving air quality would be an essential part of this.



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[redacted]

Armidale Regional Council

Submission on Draft EcoARC Council's Greenprint for Sustainability

The [redacted] submits the comments below.

1. Thank you to Council and all organisations and persons involved, for taking the time and allocating the resources to develop the draft Greenprint.

2. Thank you for recognising transport as an important area to be covered.

3. "Scope and Intent": the language needs to be more definite and certain - rather than "consider" changes, it should be stated as be certain to make these essential changes.

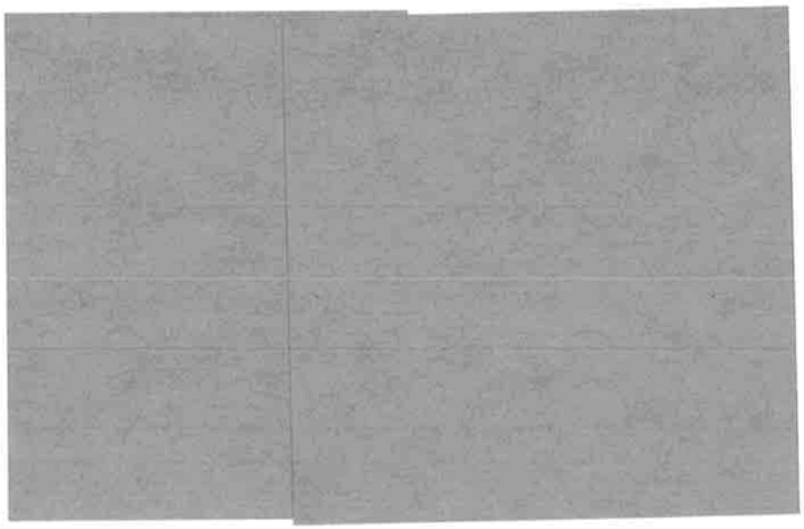
4. "Key Success Indicators" generally require numerical goals eg x% by year XXXX.

5. "Key Success Indicators": should be more certain, that is, "a region-wide transport plan that increases priority, advocacy, use encouragement and funding for improved facilities for public transport, walking and cycling."

6. "Strategic initiatives"
- "improved rail services" needs greater definition eg faster? more frequent? network expansion? All of these are supported.
- planning for the bicycle requires an overall bicycle strategy, that encompasses all aspects of cycling-for-transport within the Council area, not just "regional and local cycle route planning"
- to support community services events needs a statement of specific commitments eg "dedicate Council staff time and financial support to..."
- concentrating activities in the CBD needs to specify: "facilitate residential living within the CBD"
- specify if "provide recharge points for electric cars" means Council will pay for these and, if so, how many?
- transition of proportion of Council fleet to lower-emission vehicles, should not be something to "consider", but a definite goal of x% of the fleet be a specified year XXXX.
- for "integrated cycle-friendly routes and walking paths that are safe and identified by appropriate signs and logos" include signage aimed at vehicle drivers crossing roads, install DO NOT OVERTAKE CYCLISTS IN ROUNDABOUT on all approaches to all roundabouts and increase provision of suitable bicycle parking facilities at key locations.
- implement vehicle-sharing service specifically designed to cater for elderly residents who have mobility problems and can no longer drive their own vehicle.

7. "Advocacy and Education"
- needs a stronger statement about the urgent need to reduce carbon emissions from vehicles, especially from the largest growth sector of these emissions - private passenger vehicles.

Thank you for considering our comments. Sorry we did not have more time to consider the Transport section in greater depth, let alone have any time to consider how any other sections of the Greenprint may have related to Transport.



2

[redacted]

Dear Sir/Madam,

I wanted to supply some feedback for the draft Sustainability Plan that is currently under review. I am a little uncertain about whether the closing date for submissions is May 3rd or May 17. So am hoping this feedback can be considered.

The first comment is around biodiversity outcomes. Council has considered developing a "Flagship" biodiversity program and adopting the "Koala" to promote such a program. This sounds like a valuable initiative. It would be good to add to this the value of protecting the Box Gum Grassy Woodland Threatened Ecological Communities in our region. Especially the New England Woodlands (New England Peppermint (Eucalyptus nova-anglica on Basalts and Sediments in the New England Tableland Bioregion):
https://www.environment.nsw.gov.au/threatenedSpeciesApp/profile.aspx?id=10558

This could be an educational opportunity to increase awareness that we are in the middle of a region where this grassy woodland community and other grassy woodland communities are highly threatened (critically endangered in the case of New England Peppermint Woodlands). It is these vegetation communities that will be used in any biodiversity offsetting programs.

I think this would add significant value to a flagship biodiversity program – which could include vegetation communities and Koalas (who depend on those communities).

I also noticed that LEP is used regularly as an acronym in the draft plan, but I am unable to see what this acronym means – I may have missed the explanation.

This is a great initiative.

[redacted]

Armidale
Dumaresq Council

Armidale Dumaresq
Development Control Plan 2012

Section 1 Development Control Plan General Matters

~~Chapter 1.1 Introduction and Public Notification~~

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Table of Contents

Part 1 Introduction 1

1.1 Name of this Development Control Plan 1

1.2 Commencement of this Development Control Plan 1

1.3 Repeal of Armidale Dumaresq Development Control Plan 2007 1

1.4 Legislative background 1

1.5 Relationship to the Armidale Dumaresq Local Environmental Plan 2012 1

1.6 Relationship to legislation, plans and policies 1

1.7 Aims and objectives of this plan 2

1.8 Land to which Development Control Plan 2012 applies 2

1.9 Amendments to the development control plan 2

Part 2 What is a development control plan? 3

Part 3 Variations to development controls 3

3.1 Variations for individual applications/assessment on merit 3

Part 4 Structure of this plan 3

~~Part 5 Public notification of applications ..... 4~~

~~5.1 Legislative requirements for notification ..... 4~~

~~5.2 Why do we notify neighbours? ..... 4~~

~~5.3 Which applications require notification? ..... 4~~

~~5.4 Who is notified and how? ..... 5~~

~~5.5 What information will Council provide with notification letters? ..... 5~~

~~5.6 Can applicants assist in this process? ..... 6~~

~~5.7 Notification plans to be provided by applicants ..... 6~~

~~5.8 Can some applications be dealt with without notification? ..... 6~~

~~Part 6 Making submissions on applications ..... 6~~

~~6.1 What are the arrangements for making submissions on applications? ..... 6~~

~~6.2 To what extent will Council consider representations received? ..... 7~~

~~6.3 Is the Applicant made aware of submissions received by Council? ..... 7~~

~~6.4 What happens if plans are amended? ..... 7~~

~~6.5 What happens when an application is determined? ..... 8~~

~~6.6 Do appeal rights exist for objectors? ..... 8~~

Part 7 Assessment of development applications on council owned or controlled land 8

7.1 Who undertakes assessment on Council owned land? 8

7.2 Public notification of council applications 9

7.3 Determination of council applications 9

Part 8 Political donations 9

Part 1 Introduction

1.1 Name of this Development Control Plan

The name of this document is the *Armidale Dumaresq Development Control Plan 2012 (DCP 2012)*.

1.2 Commencement of this Development Control Plan

The *Armidale Dumaresq Development Control Plan (DCP) 2012* was adopted by Council on 24 June 2013 and came into effect on 26 June 2013.

1.3 Repeal of Armidale Dumaresq Development Control Plan 2007

This *Armidale Dumaresq DCP 2012* replaces the *Armidale Dumaresq DCP 2007*. Applications lodged for assessment up to the date of adoption of this Plan will be assessed under the DCP applicable at the lodgement date of the application.

1.4 Legislative background

This DCP has been prepared pursuant to Part 3 of the *Environmental Planning and Assessment Act 1979 (EPA Act)*. Development Consent under the EPA Act is required for most building works, subdivision of land, and changes in land use. Consent may also be required for undertaking 'works' such as significant earthworks. However, some projects with minor environmental impact can be carried out without development consent. Relevant State government State Environmental Policies and Council's Local Environmental Plan (LEP) identify whether consent is needed to carry out a particular development.

1.5 Relationship to the Armidale Dumaresq Local Environmental Plan 2012

LEPs are statutory planning instruments and should be read with this document. LEPs establish the type of development that is permissible in particular locations. This is done mainly through land use zoning and other statutory provisions and standards outlined in the LEP.

Where an LEP permits and a development application must be submitted, this DCP provides further guidance and more detailed requirements that specific proposals must address.

This DCP supports the LEPs applying to Armidale Dumaresq local government area. Armidale Dumaresq LEP 2012 (LEP 2012) applies to most of Armidale Dumaresq. The areas that LEP 2012 does not apply to are identified on the LEP maps as a 'Deferred Matter'. In the 'Deferred Matter' areas Armidale Dumaresq LEP 2008 (LEP 2008) applies.

A copy of our current LEPs and any amendments can be obtained from the NSW Parliamentary Council's website, www.legislation.nsw.gov.au (under 'Environmental Planning Instruments in force'); from Council's offices at 135 Rusden Street, Armidale; or, on Council's website www.armidale.nsw.gov.au

1.6 Relationship to legislation, plans and policies

Other Federal, State and local legislation and Council policies may apply to your development, including matters relating to issues such as infrastructure, signage, access for people with a disability, health requirements, engineering, and utility services.

Where there is an inconsistency between the provisions of an environmental planning instrument, (such as a State Environmental Planning Policy Council's LEP 2012 and this DCP, the environmental planning instrument will prevail to the extent of the inconsistency.

1.7 Aims and objectives of this plan

The aim of this Plan is to explain the legislative planning requirements for development activity in the Armidale Dumaresq local government area, including land subdivision, land use, and construction and building.

The objectives of DCP 2012 are to:

O.1 Outline the controls required for development (including subdivision and construction) in specific land use zones.

O.2 Encourage excellence in design to ensure buildings maximise solar access to living areas and private open space, and use any site to its best advantage.

O.3 Promote health, safety and amenity in the planning, design, construction and performance of individual buildings and the built environment.

O.4 Protect the environment, including the impacts on land, air and water, flora and fauna, habitats and biodiversity from the built environment.

O.5 Promote sustainability in infrastructure provision, construction materials, waste minimisation, and energy and water saving products.

O.6 Preserve and protect rural and scenic landscapes.

O.7 Avoid land use conflict and protect amenity.

O.8 Conserve and promote the heritage attributes.

1.8 Land to which Development Control Plan 2012 applies

DCP 2012 applies to all land in the Armidale Dumaresq local government area.

The following table outlines the current zone names in the LEP 2012 applying to land in the Armidale Dumaresq LGA.

R1	General Residential	B2	Local Centre
R2	Low Density Residential	B3	Commercial Core
R5	Large Lot Residential	B4	Mixed Use
RU1	Primary Production	B5	Business Development
RU3	Forestry	B7	Business Park
RU4	Primary Production Small Lots	IN1	General Industrial
RU5	Village	IN2	Light Industrial
E3	Environmental Management	RE1	Public Recreation
E4	Environmental Living	RE2	Private Recreation
SP2	Infrastructure		

The current zone name in the 'Deferred Matter' in LEP 2008 applying to land in the Armidale Dumaresq LGA is 4(a) Industrial.

1.9 Amendments to the development control plan

Any amendments made to the DCP can only take effect after a process of public exhibition, consideration of submissions, formal adoption by Council and notification of commencement in a local newspaper.

Adopted amendments to this DCP at the date of publication of this edition are set out in the table below:

Amendment Number	*Section of the DCP Amended*	*Details of Council Resolution and Date of Effect*
1	Part 5 and 6 deleted	Resolution Number Date of Effect

Part 2 What is a development control plan?

Development Control Plans (DCPs) provide specific, more comprehensive guidelines for certain types of development, or areas and precincts within Armidale Dumaresq. The detailed guidelines contained within a DCP are in addition to the provisions of the legal planning instrument (SEPP or LEP). DCPs are important in the planning system because they provide a flexible means of identifying additional development controls for addressing development issues without the need for a formal statutory plan.

Part 3 Variations to development controls

3.1 Variations for individual applications/assessment on merit

All development applications are assessed in relation to the relevant legislation, and the merits and circumstances of the application. The development controls in this DCP are a set of 'deemed to satisfy' provisions that Council is satisfied will achieve the relevant objectives. Council will consider alternative solutions where an Applicant can demonstrate that the development would satisfy the objectives. Alternative solutions must demonstrate that a better outcome can be achieved than would be the case if the development standard were applied.

Where applicants wish to apply for variations to controls in this DCP, we recommend early discussion with planning staff.

Please refer to the provisions in Clause 4.6 of the LEP 2012 where it is proposed to vary a development standard in the LEP.

Part 4 Structure of this plan

This Plan has the following six sections:

Section 1 – Development control plan general matters

Section 1 includes material which has general application and explains what a DCP is; and where and when it applies. This Part also explains the process of development consent. It does not outline the provisions for Exempt Development or Complying Development. These matters are dealt with in the *State Environmental Planning Policy (Exempt and Complying Development) Code 2008* and other legislative instruments.

Where development consent is required for construction, demolishing and subdivision, a Development Application is required by Council. This part sets out procedural and other matters relevant to Council's role as a development consent authority. This includes information to be addressed in applications, criteria for assessment and requirements for notifying the public of applications we receive.

Section 2 – Site analysis and land constraints

This section outlines the site issues to be addressed in a development application, including designing to manage site attributes and constraints.

Sections 3, 4 and 5 – Development controls

These sections describe the relevant controls for development applications for various types of development activity, such as subdivision, residential development, commercial development, industrial development and so on.

Part 6 – Locality specific precincts

This section contains information on special provisions applicable to particular localities. Please check whether your proposed development is located in one of these areas.

~~Part 5 Public notification of applications~~

~~5.1 Legislative requirements for notification~~

~~This section supplements the relevant provisions of Part 4 of the *Environmental Planning and Assessment Act 1979* and sets out the process we undertake for routine public/neighbour notification of proposed development activity.~~

~~Public notification of certain development with potentially major environmental impacts, such as 'advertised' and 'designated' development is the subject of a prescribed statutory process under the Act and Council's LEP. Such developments occur infrequently in Armidale Dumaresq. In brief, these developments normally require public notice in the local press and extended exhibition periods.~~

~~In this section, the word 'neighbour' means a person who owns land adjoining an application site (ie land which abuts an application site or is separated from it only by a pathway, driveway or similar thoroughfare), or other land which we consider may be adversely affected by development activity on an application site.~~

~~**Note:** Development Application documents, including your contact details, may be made available to others in connection with any Public Notification of the proposal. Moreover, all application documents, other than internal plans of residential parts of buildings, are available for public inspection pursuant to the *NSW Government Information (Public Access) Act and Regulation 2009*.~~

~~5.2 Why do we notify neighbours?~~

~~The process of notification enables us to consider matters that might concern your neighbours and helps us make more informed decisions. Notification of Complying Development proposals does not occur under State legislation as these do not involve merit-based assessment.~~

~~The opportunity for neighbours to comment on Development Applications is outlined in this section and will generally be provided where there is likely to be a significant adverse impact on nearby properties.~~

~~5.3 Which applications require notification?~~

~~It is Council policy for the following Development Application types to be notified to neighbours:~~

~~a) non-residential development adjoining a more sensitive land use;~~

~~b) two storey residential development;~~

~~c) multi-unit housing, where three (3) or more new units are proposed;~~

~~d) single storey dwelling houses (including alterations and additions) where a new wall adjacent to any side or rear property boundary is to be located less than 900mm from the boundary; and~~

~~e) subdivisions, where three (3) or more new lots are proposed (not including a strata subdivision where buildings currently exist on the proposed lots).~~

~~In some cases Council may decide to notify other applications, taking into consideration the following matters:~~

~~a) the views to and the view from surrounding land;~~

~~b) potential overshadowing of surrounding land;~~

~~c) privacy of surrounding land;~~

~~d) potential noise and odour emissions to the surrounding land;~~

~~e) the likely visual impact of the proposed building in relation to the streetscape;~~

~~f) the scale or bulk of the proposed building;~~

~~g) proposed hours of use;~~

~~h) potential light spillage or reflection;~~

~~i) potential traffic generation;~~

~~j) vehicle access to the site;~~

~~k) provision of parking on the site.~~

~~5.4 Who is notified and how?~~

~~We will send a letter about an application to neighbours where we think that the enjoyment of their land may be adversely affected by a proposed development. Our letters may be addressed to only one owner where a property is owned by a number of people. A notice forwarded to the Manager or Secretary of the Body Corporate, or an Association under the Community Land Development Act 1989 is taken to be a notice to the owner of each lot within a strata plan or community association, as applicable.~~

~~Our letters to neighbouring property owners will also request that any tenants of nearby properties should be advised of the application by their landlords. As a further measure, we will arrange for a sign to be displayed on the application site advising of Council's receipt of an application and the potential for the public to make submissions.~~

~~All applications on notification are available on enquiry through Council's web site.~~

~~In the case of major development activity, the legislation may require Council to place a notice in the local newspaper and write to building occupants in the vicinity of the application site.~~

~~5.5 What information will Council provide with notification letters?~~

~~Where notification is required, our notice will contain the following information:~~

~~a) description and address of the site;~~

~~b) description of the development/work and its proposed use;~~

~~c) name of the applicant and the Council;~~

~~d) where and when the plans can be inspected;~~

~~e) time period within which written submissions may be made *(see section below)*;~~

~~f) substance of written submissions may be included in reports and be available for the applicant to consider;~~

g) Notification Plans

5.6 Can applicants assist in this process?

We encourage applicants to consult with the owners and occupiers of neighbouring properties in the preparation of their proposals to reduce the potential for objections during the application process. However, we cannot accept the submission of plans or documents signed by owners of adjoining properties to the effect that they do not object to an application.

5.7 Notification plans to be provided by applicants

We require Notification Plans to be provided by applicants. The Notification Plans should not show internal floor plan configuration. The Plans should be on A4 or A3 size sheets for ease of reproduction and mailing; and

a) clearly show features of the proposed building which may impact on adjoining properties;

b) show the dimensioned height and external configuration of the proposed building in relation to the site on which it is proposed to be erected (but not internal details of any residential parts of buildings);

c) include a Site Plan showing the relationship of the proposed building to the boundaries of the allotment with clearly marked dimensions;

d) show any new building work or additions to existing buildings by means of cross hatching or other suitable notation.

5.8 Can some applications be dealt with without notification?

Yes. We will not notify an application to neighbours where:

a) it is considered that the proposal is not likely have a material impact on neighbours; or

b) a modified Development Application does not propose a significant change to the use, height and/or the external configuration of premises, as shown on the original Development Application.

Part 6 Making submissions on applications

6.1 What are the arrangements for making submissions on applications?

Any person may make a submission for a minimum of 10 working days (ie. days during which the Council is open for business) after we notify an application. The closing date for comments will be clearly indicated in the notification letter, together with the name of the relevant contact person. Full scale plans (other than internal plans of residential buildings) can be inspected during the notification period at the Council's Customer Service Centre, Civic Administration Building, 135 Rusden Street Armidale between the hours of 9.00am - 4.00pm.

Note: Full scale plans refer to the scaled plans that the Applicant supplies to Council as part of the Development Application. The Notification Plans supplied as part of the notification process are usually A3 or A4 size plans (ie. reduced from the original full scale plans). These plans may not be to scale.

We may provide an additional period for submissions in the circumstances of individual applications, such as major projects. Special arrangements may also be made with the Planning Project Officer to enable a person to inspect a Notification Plan relating to an application outside our normal business hours or for people who are unable to visit Council's offices.

~~Submissions made in relation to applications must be in writing and addressed to the General Manager. They must indicate the name and address of the person making the submission, and should relate directly to the development proposed and its possible impact on surrounding property or locality.~~

~~Special arrangements may be made with the Planning Project Officer to make submissions in a form other than in writing where this creates difficulties for a person wishing to respond (e.g. people with disabilities).~~

~~6.2 To what extent will Council consider representations received?~~

~~Out of courtesy to applicants, and in order to meet legal requirements, we need to consider all applications as soon as possible. Equally, our staff must consider all submissions made in response to the notification process before determining the application.~~

~~The matters which we must consider in the assessment of applications are set out in the *Environmental Planning and Assessment Act 1979.*~~

~~The legislation and this DCP provide the basis against which applicants need to prepare proposals to carry out development in Armidale Dumaresq. Applicants have the expectation that they can carry out work that is in accordance with the permitted use of the land and relevant policies adopted by Council. However, an applicant's compliance with quantitative standards does not necessarily guarantee success. Equally important are the environmental merits of each proposal.~~

~~Comments received from the public will be considered in conjunction with Council's legal responsibilities, the interests of the community at large and the reasonable expectations and rights of the applicants. We are often required to resolve a number of competing interests in decisions that we make.~~

~~The Planning Project Officer responsible for a specific application can help with enquiries.~~

~~All submissions are considered in reports prepared by our officers. The report sets out representations and any relevant responses by the applicant. All such material is considered as part of the decision-making process. Where valid objections are received and cannot be resolved by negotiation or imposing Conditions of Consent or Approval, the matter will usually be referred to a full Council meeting for decision.~~

~~6.3 Is the Applicant made aware of submissions received by Council?~~

~~Issues raised in written submissions cannot remain completely confidential as they may be used in negotiations with the applicant. In the event of a dispute, our officers may meet with objectors and applicants to discuss issues arising from an application, clarify concerns and seek possible solutions.~~

~~In addition, written submissions may be subject to requests under State legislation relating to the use of Government Information, and the details may be included in Council Business Papers.~~

~~However, in order to protect the confidentiality of information and having regard to NSW privacy laws, documents containing personal information such as name, address, phone numbers and signatures are not included on open Council business papers or placed on Council's web site.~~

~~6.4 What happens if plans are amended?~~

~~An applicant may make amendments to an application at any time before its determination, and request modification of any Development Consent afterwards. In these circumstances, we will re-~~ notify:

~~a) those persons who made submissions on the original application; and~~

~~b) any other persons who own adjoining land (including those persons who were previously notified of the application) who may be detrimentally affected by the proposal as amended,~~

~~unless, in our opinion, the amendments are unlikely to have greater or different detrimental effect on the enjoyment of adjoining or neighbouring land than the original application. If re-notification is required, further sets of plans for this purpose must be provided by the applicant.~~

~~We will consider the submissions made on the original application in conjunction with our assessment of amended proposals.~~

~~**6.5 What happens when an application is determined?**~~

~~After the application has been determined, we will write to each person who made a submission, to advise them of our decision and the manner in which their concerns were considered and addressed in the assessment process.~~

~~**6.6 Do appeal rights exist for objectors?**~~

~~The applicant may appeal to the Land and Environment Court of NSW against any Condition of Approval or a decision to refuse an application. While options such as mediation may be pursued in an effort to reach an amicable resolution of any dispute, ultimately, we may have to justify our decision to the Court.~~

~~Where we have relied on submissions from the public in reaching a decision, we may ask the people who made submissions to support the decision by participating in any mediation process or appearing on Council's behalf at any subsequent Court hearing.~~

~~Where objectors are dissatisfied with our final decision, appeal to the Court is normally available only on the grounds that Council has made a legally invalid decision. Merit issues may be appealed in respect of major 'Designated' Development Applications under the *Environmental Planning and Assessment Act 1979*.~~

~~If you are considering an appeal, it is a good idea to obtain legal advice first.~~

Part 7 Assessment of development applications on council owned or controlled land

7.1 Who undertakes assessment on Council owned land?

When considering an application for land that Council owns or controls, and where Council would normally be the decision-maker, an independent assessment of the application will be undertaken by:

a) appropriately qualified Council Officers not involved in preparing or commissioning the application; and/or

b) appropriately qualified Consultants; and/or

c) appropriately qualified officers of another Council.

In deciding whether to use outside assistance, we will consider the estimated cost of the development, the public interest in the matter and the extent of any public concern that may be evident to Council on the matter. Small-scale, uncontroversial applications would always be processed 'in-house'. Consultants, or the staff of another Council, would normally be used where there are inadequate internal resources to separate Council's functions or the matter is considered significant in size, cost or in terms of public interest.

~~**7.2 Public notification of council applications**~~

~~When we are considering an application for land which we own or control where we are also the decision-maker, public notification will take place in accordance with the notification requirements outlined in this chapter, and may also be advertised in the local newspaper.~~

7.3 Determination of council applications **Re-number to 7.2**

An application for land which we own or control will be determined at an open meeting of the Council, unless:

a) the application involves matters which must be considered in private, pursuant to s.10 of the *Local Government Act 1993*, in which case we will first discuss the most appropriate means of dealing with the matter with our legal advisors or the state government; or

b) the development does not involve:

   i) 'Designated development' under the *Environmental Planning and Assessment Act 1979*; or

   ii) development to which s.23G of the EP&A Act applies, involving determination by a Joint Regional Planning Panel; and

   iii) development that is of State significance under the Act or which under any other relevant legislation requires determination by an agency other than Council; or

c) the development is not being undertaken primarily to return a financial benefit to the council or the proposal relates to an operational activity of the council; and

d) no objections have been received in response to public notification of the application; and

e) the proposed development complies with all applicable development standards; and

f) Councillors have previously been notified of the proposal;

in which case the application may be determined by the General Manager or delegate, provided they have not been involved in the preparation of the application.

Part 8 Political donations

Section 147 of the *Environmental Planning and Assessment Act 1979* also makes specific provision for the declaration by applicants or persons making submissions (or their associates) in relation to development applications under the Act, where they have made certain political donations or gifts to a local Councillor or employee of Council.

Such declarations must then be maintained in a public register and included on Council's web site. Further details of the relevant requirements are included in Council's development application forms and notification letters.

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Table of Contents

1. COMMUNITY PARTICIPATION IN THE PLANNING SYSTEM 2

1.1 WHAT IS COMMUNITY ENGAGEMENT? 2
1.2 WHY IS COMMUNITY PARTICIPATION IMPORTANT? 3
1.3 WHAT IS OUR COMMUNITY PARTICIPATION PLAN AND WHY IS IT IMPORTANT TO PLANNING? 3
1.4 PRINCIPLES OF THE COMMUNITY PARTICIPATION PLAN 4

2. WHAT PLANNING FUNCTIONS DOES OUR COMMUNITY PARTICIPATION PLAN APPLY TO? 5

3. WHAT PLANNING FUNCTIONS DOES OUR COMMUNITY PARTICIPATION PLAN NOT APPLY TO? 7

4. WHAT ARE COUNCIL'S NOTIFICATION AND EXHIBITION REQUIREMENTS? 8

4.1 STRATEGIC PLANNING – COMMUNITY PARTICIPATION REQUIREMENTS 8
4.1.1 HOW STRATEGIC PLANNING FUNCTIONS MAY BE EXHIBITED 9
4.2 DEVELOPMENT ASSESSMENT – COMMUNITY PARTICIPATION REQUIREMENTS 10
4.2.1 HOW DEVELOPMENT ASSESSMENT FUNCTIONS MAY BE EXHIBITED 11
4.2.1.1 NOTIFICATION OF DEVELOPMENT APPLICATIONS 11
4.2.1.2 WHAT INFORMATION WILL COUNCIL PROVIDE WITH NOTIFICATION LETTERS? 11
4.2.2 ADVERTISING OF DEVELOPMENT APPLICATION'S 12

5. COUNCIL AND COMMUNITY INTERACTION 13

5.1 HOW CAN THE COMMUNITY GET INVOLVED IN A TOWN PLANNING MATTER? 13
5.2 HOW DOES COUNCIL CONSIDER COMMUNITY INPUT? 14
5.3 DISCLOSURE OF SUBMISSIONS 14

6. GLOSSARY 15

Figure 1 Community Engagement 3
Figure 2 Refocusing the NSW planning system 5

Table 1 Planning Functions 6
Table 2 Strategic Planning Mandatory Exhibition Timeframes 8
Table 3 Stakeholders 9
Table 4 Development Assessment Mandatory Exhibition Timeframes 10

1. Community participation in the planning system

Armidale Regional Council recognises community participation throughout the planning system is not only your right, it also delivers better planning results for the people of the Armidale Region.

Ultimately, Council has a responsibility, along with the NSW Department of Planning, Industry and Environment, to deliver the objectives of the Environmental Planning and Assessment Act 1979 (EP & A Act) including the promotion of orderly and economic use of land, facilitating ecologically sustainable development and promoting social and economic wellbeing.

Community participation is an overarching term covering how Council will engage with the community in our work under the EP & A Act, including legislative reform, plan making and decisions on proposed development. The level and extent of community participation will vary depending on the community, the scope of the proposal under consideration and the potential impact of the decision.

The community includes anyone who is affected by the planning system and includes individuals, community groups, Aboriginal communities, peak bodies representing a range of interests, businesses, local government and State and Commonwealth government agencies.

1.1 What is community engagement?

Community engagement is a planned process with the specific purpose of working with identified groups of people, whether they are connected by geographic location, special interest, or affiliation to address issues affecting their well-being.

Community engagement allows community members to actively contribute to Council decisions and actions by creating an inclusive environment in which community feedback is embraced, considered and acted upon.

Figure 1 Community Engagement

1.2 Why is community participation important?

- It builds community confidence in the planning system.
- Community participation creates a shared sense of purpose, direction and understanding of the need to manage growth and change, while preserving character.
- It provides access to community knowledge, ideas and expertise.

1.3 What is our Community Participation Plan and why is it important to planning?

Planning is an important function of Council and it plays a part in defining our local communities. Planning influences how people experience the region on a daily basis, whether they be living, working, or visiting the area.

Community participation is an important component of Council's role in serving the community, particularly with regard to our role as the local planning authority.

The Armidale Regional Council Community Participation Plan (CPP) sets out how and when Council will engage with the community when undertaking its town planning functions under the EP & A Act. It applies to the entire Armidale Regional Local Government Area.

The intent of the CPP is to make it easier for the community to understand how to get involved in planning matters. It provides guidance on how the community can have a say on the different types of planning documents and planning outcomes.

The CPP has been prepared in accordance with Section 2.6 and Schedule 1 of the EP & A Act.

This CPP does not outline Council's engagement strategies for the delivery of other Council services, functions or infrastructure. Community engagement for these activities are developed considering the requirements of Council's Community Engagement Strategy and Community Strategic Plan.

1.4 Principles of the Community Participation Plan

The EP & A Act guides Council to ensure that it will be clearer and easier for the community to understand how it can participate in planning decisions. The EP & A Act outlines the principles that underpin Council's CPP. These principles are outlined below:

a) The community has a right to be informed about planning matters that affect it.

b) Council will encourage effective and on-going partnerships with the community to provide meaningful opportunities for community participation in planning.

c) Planning information will be in plain language, easily accessible and in a form that facilitates community participation in planning.

d) The community will be given opportunities to participate in strategic planning as early as possible to enable community views to be genuinely considered.

e) Community participation will be inclusive and Council will actively seek views that are representative of the community.

f) Members of the community who are affected by proposed major developments will be consulted by the proponent before an application for planning approval is made.

g) Planning decisions will be made in an open and transparent way and the community will be provided with reasons for those decisions (including how community views have been taken into account).

h) Community participation methods (and the reasons given for planning decisions) will be appropriate having regard to the significance and likely impact of the proposed development.

2. What planning functions does our Community Participation Plan apply to?

Council's planning functions are divided into two key areas of "strategic planning" and "development assessment".

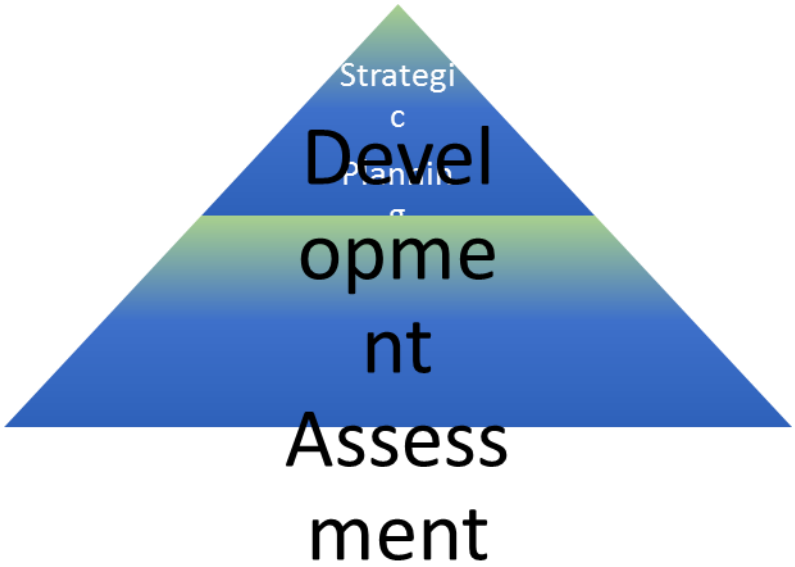
Strategic planning is an essential aspect of Councils work where we set the strategic direction, vision and context for the planning system in the Armidale Regional Local Government Area.

Once the strategic direction has been established, Council makes planning decisions on a range of Development Applications. Development Applications assessed by Council include but are not limited to residential dwellings, unit development, subdivisions, commercial and industrial development, agricultural developments and infrastructure upgrades.

When applying the principles of community participation to the planning system it is critical to consider the scale of the planning matter, the approvals pathway under which it is being assessed and the associated impact.

The NSW State Government, Council and other planning authorities are working to refocus the hierarchy, shifting the focus will help planning authorities to ensure community participation occurs at the appropriate approval pathway.

The new focus for the NSW planning system



The former focus for the NSW planning system

Figure 2 Refocusing the NSW planning system

This CPP applies to the following planning functions:

Strategic Planning	Development Assessment
• Community Participation Plans	• Development Applications (other than Complying Development Certificates)
• Local Strategic Planning Statements	• Applications for modification of development consents
• Local Environmental Plans	• Environmental Impact Statements under Division 5.1 of the EP & A Act 1979
• Development Control Plans	
• Contribution Plans	
• Voluntary Planning Agreements	
• Reclassification of Land	
• Planning Proposals	
• Local Approval Policies – significant changes – new uses added or significant amendment made	

Table 1 Planning Functions

3. What planning functions does our Community Participation Plan NOT apply to?

Some types of development do not need development consent from Council and therefore there is no pathway for formal community participation or consultation. This CPP does not relate to applications that fall within the following development categories:

- Development which is **exempt development** under the provisions of the *Armidale Dumaresq Local Environmental Plan 2012, Guyra Local Environmental Plan 2012* or any applicable State Environmental Planning Policy; or
- Development which is **complying development** or **development permitted without consent** (Part 5) under the provisions of any applicable State Environmental Planning Policy or Local Environmental Plan.

For detailed descriptions of the above types of planning function, "strategic planning" and "development assessment" refer to the Glossary at the end of this documents.

4. What are Council's notification and exhibition requirements?

The opportunity for community participation will vary depending on the community, the scope of the proposal under consideration and the potential impact of the decision. A regular and valuable way for the community to participate in the planning system is by making a written submission on a proposal during an exhibition period.

This section of the CPP outlines all notification and exhibition requirements as mandated by the EP & A Act.

The types of proposals that must be publicly exhibited and the minimum timeframes for exhibition are set out below in Table 1 - Strategic Planning and Table 2 - Development Assessment. These are mandatory requirements and the same as under Section 2.21(2) and Schedule 1 of the EP & A Act. Council will always exhibit a proposal for the minimum timeframe and may consider an extended timeframe for exhibition based on the scale and nature of the proposal.

Key points to note about public exhibitions:

- Timeframes for all public exhibition are in calendar days and include weekends.
- If the exhibition period is due to close on a weekend or public holiday Council may extend the exhibition to finish on the first available work day.
- The period between 20 December and 10 January (inclusive) is excluded from the calculation period of public exhibition.
- A public authority is not required to make available for public inspection any part of an Environmental Impact Statement whose publication would, in the opinion of the public authority, be contrary to the public interest because of its confidential nature or for any other reason.

4.1 Strategic Planning – Community Participation Requirements

The following minimum timeframes are required for the exhibition of strategic planning functions:

Strategic Planning mandatory exhibition timeframes	
Planning Matter	**Minimum Length of exhibition**
Draft Community Participation Plan	28 days
Draft Local Strategic Planning Statement	
Planning Proposals for Local Environmental Plans subject to a Gateway Determination	28 days **or** As specified by the Gateway Determination which may find, due to the minor nature of the proposal, that no public exhibition is required
Draft Development Control Plans	28 days
Draft Developer Contribution Plans	

Draft Planning Agreements	

Table 2 Strategic Planning Mandatory Exhibition Timeframes

4.1.1 How strategic planning functions may be exhibited

The following methods of public exhibition will be used to inform the community of the strategic planning functions of Council:

- Council Notices within the local paper;
- Council's website;
- Council's social media;
- Static displays at Council's Administration Centres of Armidale and Guyra and other locations (as applicable).

Depending on the specific strategic planning matters being considered, Council may also undertake one or more of the following consultation methods:

- Targeted stakeholder consultations/meetings;
- On-line surveys;
- One on one engagement with Council staff;
- Open days/drop in sessions;
- Letters to stakeholders;
- Notices within other newspapers; and
- Notices on the land.

Stakeholders include, but are not limited to:

• Landowners	• Local Aboriginal Land Council's
• Business Owners	• Chamber of Commerce
• Developers	• Other Council's
• Real Estate Agents	• Sporting Groups
• Government Agencies	• Village Associations
• Community Groups	• Members of Parliament
• Council Committees	• Non-Government Organisations

Table 3 Stakeholders

4.2 Development Assessment – Community Participation Requirements

The following minimum timeframes are required for the exhibition of development assessment functions:

Development Assessment mandatory exhibition timeframes	
Proposal	**Minimum length of exhibition**
Application for development consent (other than for complying development certificate, for designated development or for State significant development) including Integrated development applications	14 days*
Application for development consent for designated development	28 days
Application for development /modification of development consent that is required to be publicly exhibited by the regulations	
Application for development consent that is defined as nominated integrated development or threatened species development	

Table 4 Development Assessment Mandatory Exhibition Timeframes

* In certain circumstances Council may dispense with notification. Notification may not be undertaken when:

1. Council is of the opinion an amended or substituted application (including applications under s4.55 or s8.3 of the Environmental Planning and Assessment Act) varies in a minor respect from the original application that was previously notified.

2. Council is of the opinion the development is of a minor nature that will not adversely affect the amenity of adjoining land or the or the locality.

3. The application is for a temporary use as detailed in Armidale Dumaresq Local Environmental Plan 2012 and Guyra Local Environmental plan 2012 and in the opinion of Council will not adversely affect the amenity of the locality.

4. Development is for a residential dwelling, or additions to a residential dwelling, provided the development (noting the provisions in the respective Development Control Plans, prevail in the event of any inconsistency):

   a) is a maximum of two storey, and

   b) has a maximum height of 8.5m measured from the existing ground level, and

   c) the external wall of the building is not built within 900mm of the lot boundary

5. Development is for a new attached or detached ancillary development to a residential dwelling, including but not limited to, secondary dwellings, sheds, pools, water tanks, decks etc, provided the development (noting the provisions in the relevant Development Control Plans, prevail in the event of any inconsistency):
   a) has a maximum height of 4.5m measured from the existing ground level, and
   b) the external wall of the building is not built within 900mm of the lot boundary."

4.2.1 How development assessment functions may be exhibited

4.2.1.1 Notification of Development Applications

A written notice of a Development Application will be sent to the persons who own land and/or neighbouring land when a Development Application has been received, where, in Council's opinion, the enjoyment of their land may be affected by a proposed development.

The notification period/public exhibition will be a minimum of **fourteen (14) days.**

All applications on notification are available on Council's website.

Note:
Where the land is a parcel created under the Community Land Development Act, Strata Titles, or Strata Titles (Leasehold) Acts, a written notice to the Governing Association is taken to be the owner. Where more than one person is listed as the owner, a written notice to one of the owners is taken to be a notice to the owner.

4.2.1.2 What information will Council provide with notification letters?

Where notification is required, our notice will contain the following information:

a) Description and address of the site;
b) Description of the development/work and its proposed use;
c) Name of the applicant and the Council;
d) Where and when plans can be inspected;
e) Time period within which written submissions may be made;
f) Substance of written submissions may be included in reports and be available for the applicant to consider; and
g) Notification Plans.

4.2.2 Advertising of Development Application's

In addition to notification/public exhibition requirements set out in Section 4.2 of this Plan, the following types of development (as defined in the *Armidale Dumaresq Local Environmental Plan 2012*) also require advertisement within the local paper:

The advertised period will be a minimum of fourteen (14) days from the date of the advertisement within the local newspaper.
Where in the opinion of Council, the development (including modification) is a minor alteration and/or addition to a development type listed above, advertising of a Development Application may not be required.

The EP&A Act and other State Environmental Planning Policies may specify circumstances where certain applications require advertisement. In certain circumstances, Council may choose to advertise a development not listed above if it is considered necessary on the basis that it is in the public interest.

5. Council and Community Interaction

5.1 How can the community get involved in a town planning matter?

Any person is entitled to make a "written submission" which may be either an objection to or support a planning matter within the public exhibition, notification or advertising period.

Submissions can be made by:

- Make a formal submission on an exhibition by going online to our website, or by writing to the Council.
- Visiting our Council Administration Buildings in Armidale and Guyra where staff will help you access public exhibition documents. Documents may also be available in your local Library. Staff will also answer any questions that you have or connect you to the appropriate Council officers who can help you.
- Connect directly with Council staff working on a proposal, policy, plan or project. Contact details are typically available on our exhibition website.
- Please note that exhibition timeframes may vary in length. Some timeframes are prescribed by legislation and others are at our discretion.

Submissions should include the following:

- The reasons for the objection or support;
- Submissions must be in writing, be addressed to the General Manager, clearly indicating the names, address of the person(s) making the submission, quote the development application number (if relevant), the subject matter and clearly state the address of the property;
- Submissions must include the postal address or e-mail of person(s) making submissions so they can be notified in advance if the matter is to be considered by Council at a Council meeting, or the Northern Regional Planning Panel where they are the Consent Authority for the Application. This information will remain public and may be included in reports to Council.
- If the person(s) lodging the submission/s do not wish their personal information to be made public, the submission is to clearly make a statement to that effect, however their name and suburb (if available) will remain public.
- Council will consider making a submission confidential, however, the submission must make a statement to that effect and clearly outline the reasons the submission should be confidential.
- Declaration of any political donations.

All written submission received during the public exhibition, notification or advertising period will be acknowledged (in writing) as soon as practicable by Council.

Where a petition is received in respect to a development application or strategic planning project, the head petitioner or, where not nominated, the first petitioner will be acknowledged in writing by Council for the purpose of future contact regarding progress of the application.

Anonymous submissions will not be considered by Council.

5.2 How does Council consider community input?

Submissions received during the public exhibition, notification or advertising period will be considered in the Council officer's assessment of the matter.

Council's consideration of a submission is restricted to planning matters. Matters that are not planning related such as civil disputes between neighbours and private issues cannot be considered.

In certain circumstances, a planning matter and any submissions may be referred to a Committee and/or a Council meeting for consideration. Submissions will form part of the assessment report prepared by Council's Planning staff for consideration by the Committee or Council. The report forms part of the Committee or Council's Business Paper which is a public document and available upon request. Business Papers can be downloaded from Council's website.

Following determination of a Development Application, of the adoption of a strategic plan, all persons who made a written submission will be notified (in writing) of the decision, and reasons for the decision, regarding the application, strategy or plan.

5.3 Disclosure of submissions

Submissions are not kept confidential. Council releases submissions when a request is made in accordance with the relevant provisions of under the *Government Information (Public Access) Act 2009*. When a submission is released by law, Council routinely withholds contact numbers, email addresses and signatures.

Should you wish for all personal details or any information that may identify you to be withheld from the public, please advise Council of this in your submission.

6. Glossary

Planning Term	Definition
Contribution Plan	A plan developed by councils for the purpose of gaining financial contributions from new development towards the cost of new and upgraded public amenities and/or services required to accommodate the new development
Designated Development	Designated Development refers to developments that are high-impact developments (eg. likely to generate pollution) or are located in or near an environmentally sensitive area
Development control plans	A plan that provides detailed planning and design guidelines to support the planning controls in a LEP
Local Environmental Plan (LEP)	An environmental planning instrument developed by a local planning authority, generally a council. An LEP sets the planning framework for a Local Government Area
Regional strategic plan	20-year plan that address the community's needs for housing, jobs, infrastructure and a healthy environment for a Department of Planning and Environment (DPE) region
State Environmental Planning Policy (SEPP)	An environmental planning instrument developed by the DPE, that relates to planning matters that are state significant or are applicable across the state
State Significant Development (SSD)	Some types of development are deemed to have State significance due to the size, economic value or potential impacts that a development may have. Examples of possible SSD include: new educational establishments, hospitals and energy generating facilitates
State Significant Infrastructure (SSI)	SSI includes major transport and services development that have a wider significance and impact than on just the local area. Examples of possible SSI include: rail infrastructure, road infrastructure and water storage and treatment plants
Integrated development	Is development that requires development consent and one or more approvals from a

	NSW State Government Agency, which may include the NSW Office of Environment and Heritage, Environmental Protection Authority, NSW Rural Fire Services and/or Roads and Maritime Services
Threatened species development	Is development that is likely to have a significant impact or harm to an animal or plant that is a threatened species or part of a threatened ecological community. This also includes development that will result in damage to the habitat of a threatened species or threatened ecological community or damage to a declared area of outstanding biodiversity value

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Portfolio Report

As at 30 November 2019

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Section

1	Portfolio Summary
2	Investment Register
3	Limit Compliance Reports
4	Counterparty Exposures
5	End of Month Performance
6	Transactions

Disclaimer

This document is intended to provide you with general information only, it is not intended to imply a recommendation or otherwise constitute advice in relation to financial products. It does not take into account your investment objectives, financial situation or particular needs. Before acting on any information you obtain from this document you need to consider the appropriateness of the information in lieu of your investment objectives, financial situation or needs.

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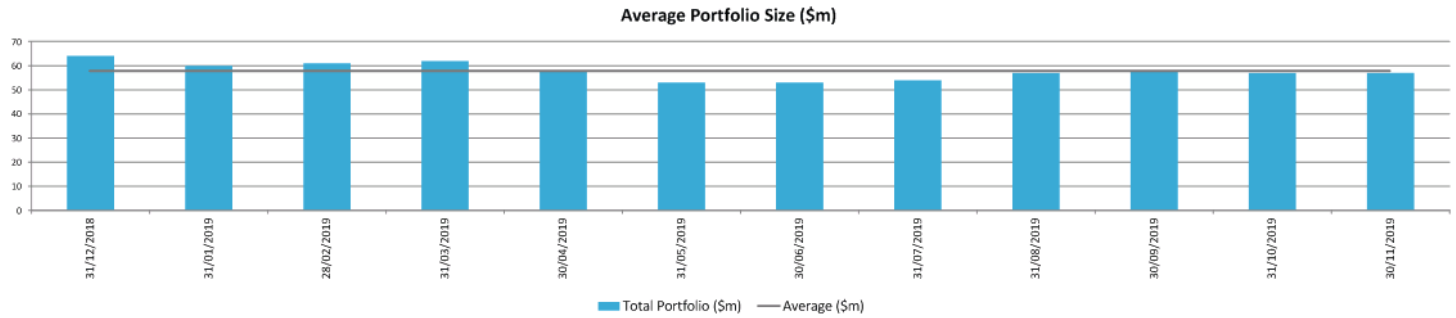
Section 1: Portfolio Summary as at 30 November 2019

Total Cost	Total Accrued Interest	Average Weighted Yield
57,000,000	555,521	2.03%
Total Current Value	**Total Monthly Accrued Interest**	**Average Weighted Term in Days**
57,000,000	83,267	149
Unrealised Capital Gain/Loss	**Total Interest Received for the Month**	**Total Interest Received for the Financial Year**
0	327,780	765,699

Investment Type	Cost	Current Value	Unrealised Capital Gain/Loss	Total Accrued Interest	Monthly Accrued Interest	Interest Received	Current Weighted Yield	Current Weighted Term in Days
Term Deposit	57,000,000	57,000,000	-	555,521	83,267	327,780	2.03%	149



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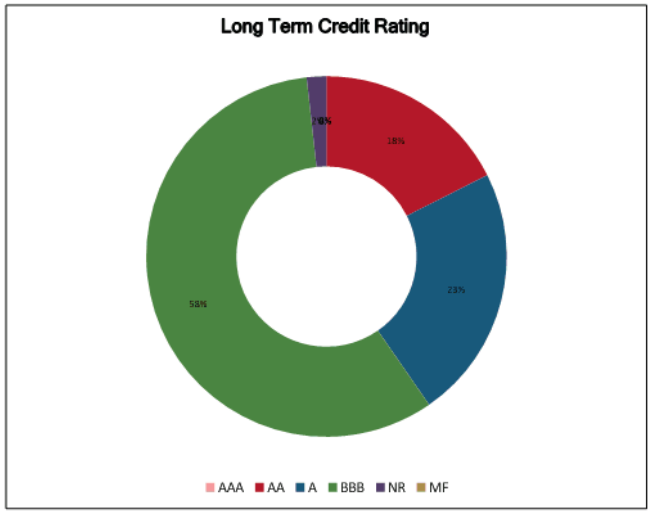
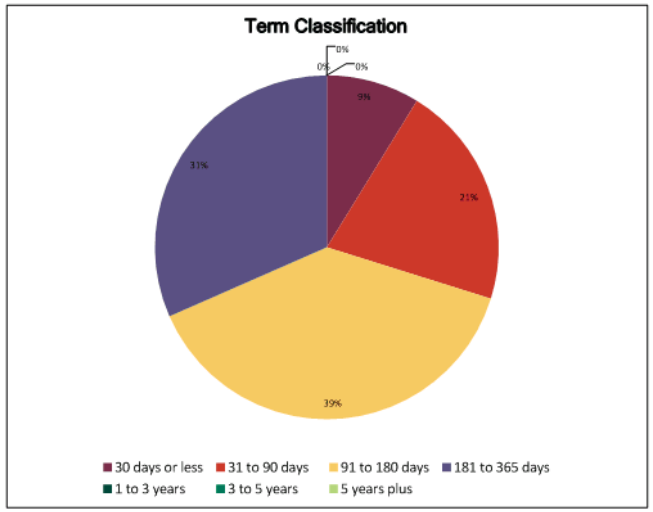
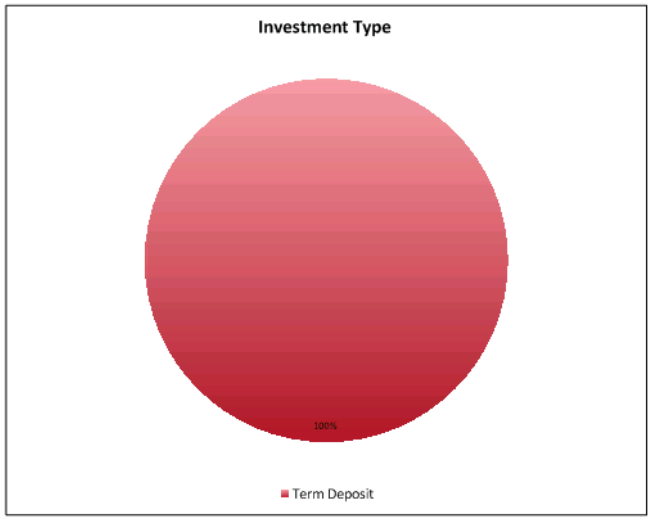
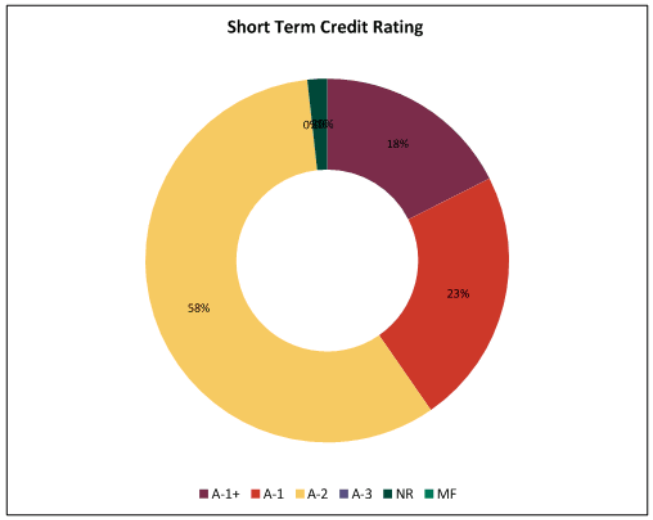
Section 1: Portfolio Summary as at 30 November 2019









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Section 2: Investment Register as at 30 November 2019

ADI / Issuer	Investment Type	Contract Number	Face Value	Settlement Date	Maturity Date	Yield / Issue Margin (%)	S&P Long Term Rating	Term Classification	Capital Purchase Value	Capital Valuation	Accrued Interest	Monthly Accrued Interest
AMP BANK LTD	Term Deposit	037914	1,000,000	21/02/2019	19/02/2020	2.75	BBB+	31 to 90 days	1,000,000	1,000,000	21,322	2,260
AMP BANK LTD	Term Deposit	039719	1,000,000	30/05/2019	27/05/2020	2.25	BBB+	91 to 180 days	1,000,000	1,000,000	11,404	1,849
AMP BANK LTD	Term Deposit	040487	1,000,000	11/07/2019	8/07/2020	2.15	BBB+	181 to 365 days	1,000,000	1,000,000	8,423	1,767
AMP BANK LTD	Term Deposit	038313	2,000,000	6/03/2019	11/03/2020	2.75	BBB+	91 to 180 days	2,000,000	2,000,000	40,685	4,521
AMP BANK LTD	Term Deposit	041219	1,000,000	21/08/2019	20/08/2020	1.80	BBB+	181 to 365 days	1,000,000	1,000,000	5,030	1,479
AUST AND NZ BANKING GROUP	Term Deposit	041055	2,000,000	8/08/2019	5/08/2020	1.55	AA-	181 to 365 days	2,000,000	2,000,000	9,767	2,548
BANK OF QUEENSLAND LTD	Term Deposit	041045	2,000,000	7/08/2019	11/08/2020	1.70	BBB+	181 to 365 days	2,000,000	2,000,000	10,805	2,795
BANK OF QUEENSLAND LTD	Term Deposit	040077	1,000,000	19/06/2019	22/04/2020	2.05	BBB+	91 to 180 days	1,000,000	1,000,000	9,267	1,685
BANK OF QUEENSLAND LTD	Term Deposit	041504	1,000,000	4/09/2019	2/09/2020	1.55	BBB+	181 to 365 days	1,000,000	1,000,000	3,737	1,274
BENDIGO AND ADELAIDE BANK	Term Deposit	041120	2,000,000	13/08/2019	12/08/2020	1.60	BBB+	181 to 365 days	2,000,000	2,000,000	9,644	2,630
BEYOND BANK AUSTRALIA	Term Deposit	036203	1,000,000	4/12/2018	4/12/2019	2.80	BBB	30 days or less	1,000,000	1,000,000	27,770	2,301
BEYOND BANK AUSTRALIA	Term Deposit	039807	1,000,000	5/06/2019	15/01/2020	2.40	BBB	31 to 90 days	1,000,000	1,000,000	11,770	1,973
COMMUNITY MUTUAL LTD	Term Deposit	041921	1,000,000	25/09/2019	23/09/2020	1.75	NR	181 to 365 days	1,000,000	1,000,000	3,212	1,438
CREDIT UNION AUSTRALIA LTD	Term Deposit	039955	1,000,000	13/06/2019	11/06/2020	2.05	BBB	181 to 365 days	1,000,000	1,000,000	9,604	1,685
CREDIT UNION AUSTRALIA LTD	Term Deposit	042033	2,000,000	2/10/2019	30/09/2020	1.50	BBB	181 to 365 days	2,000,000	2,000,000	4,932	2,466
DEFENCE BANK LTD	Term Deposit	040228	1,000,000	27/06/2019	22/04/2020	2.15	BBB	91 to 180 days	1,000,000	1,000,000	9,248	1,767
DEFENCE BANK LTD	Term Deposit	040070	1,000,000	19/06/2019	17/06/2020	2.20	BBB	181 to 365 days	1,000,000	1,000,000	9,945	1,808
MACQUARIE BANK	Term Deposit	041538	1,000,000	4/09/2019	6/05/2020	1.65	A	91 to 180 days	1,000,000	1,000,000	3,978	1,356
MACQUARIE BANK	Term Deposit	043063	8,000,000	28/11/2019	28/04/2020	1.60	A	91 to 180 days	8,000,000	8,000,000	1,052	1,052
MACQUARIE BANK	Term Deposit	041539	1,000,000	4/09/2019	13/05/2020	1.65	A	91 to 180 days	1,000,000	1,000,000	3,978	1,356
MACQUARIE BANK	Term Deposit	042950	1,000,000	22/11/2019	20/05/2020	1.60	A	91 to 180 days	1,000,000	1,000,000	395	395
MACQUARIE BANK	Term Deposit	041362	2,000,000	30/08/2019	27/04/2020	1.65	A	91 to 180 days	2,000,000	2,000,000	8,408	2,712
MEMBERS EQUITY BANK LTD	Term Deposit	040743	2,000,000	26/07/2019	22/07/2020	1.80	BBB	181 to 365 days	2,000,000	2,000,000	12,625	2,959
MEMBERS EQUITY BANK LTD	Term Deposit	037749	1,000,000	14/02/2019	5/02/2020	2.70	BBB	31 to 90 days	1,000,000	1,000,000	21,452	2,219
MEMBERS EQUITY BANK LTD	Term Deposit	038132	1,000,000	27/02/2019	27/02/2020	2.65	BBB	31 to 90 days	1,000,000	1,000,000	20,111	2,178
MEMBERS EQUITY BANK LTD	Term Deposit	038511	2,000,000	18/03/2019	18/03/2020	2.60	BBB	91 to 180 days	2,000,000	2,000,000	36,756	4,274
MYSTATE BANK LTD	Term Deposit	036608	2,000,000	13/12/2018	12/12/2019	2.85	BBB+	30 days or less	2,000,000	2,000,000	55,126	4,685
MYSTATE BANK LTD	Term Deposit	036564	1,000,000	11/12/2018	11/12/2019	2.80	BBB+	30 days or less	1,000,000	1,000,000	27,233	2,301
MYSTATE BANK LTD	Term Deposit	037566	1,000,000	5/02/2019	22/01/2020	2.85	BBB+	31 to 90 days	1,000,000	1,000,000	23,347	2,342
MYSTATE BANK LTD	Term Deposit	042560	1,000,000	1/11/2019	29/01/2020	1.70	BBB+	31 to 90 days	1,000,000	1,000,000	1,397	1,397
NATIONAL AUSTRALIA BANK LTD	Term Deposit	041691	1,000,000	12/09/2019	9/09/2020	1.60	AA-	181 to 365 days	1,000,000	1,000,000	3,507	1,315
NATIONAL AUSTRALIA BANK LTD	Term Deposit	036758	1,000,000	20/12/2018	18/12/2019	2.70	AA-	30 days or less	1,000,000	1,000,000	25,595	2,219
NATIONAL AUSTRALIA BANK LTD	Term Deposit	042677	1,000,000	7/11/2019	12/02/2020	1.53	AA-	31 to 90 days	1,000,000	1,000,000	1,006	1,006
NATIONAL AUSTRALIA BANK LTD	Term Deposit	042781	2,000,000	14/11/2019	13/02/2020	1.53	AA-	31 to 90 days	2,000,000	2,000,000	1,425	1,425
POLICE FINANCIAL SERVICES LTD	Term Deposit	040495	1,000,000	12/07/2019	17/06/2020	1.95	BBB+	181 to 365 days	1,000,000	1,000,000	7,586	1,603
POLICE FINANCIAL SERVICES LTD	Term Deposit	040282	1,000,000	1/07/2019	1/04/2020	2.10	BBB+	91 to 180 days	1,000,000	1,000,000	8,803	1,726
RURAL BANK	Term Deposit	038133	1,000,000	27/02/2019	20/02/2020	2.60	BBB+	31 to 90 days	1,000,000	1,000,000	19,732	2,137
WESTPAC BANKING CORP	Term Deposit	036931	2,000,000	8/01/2019	8/01/2020	2.60	AA-	31 to 90 days	2,000,000	2,000,000	46,586	4,274
WESTPAC BANKING CORP	Term Deposit	038273	1,000,000	5/03/2019	4/03/2020	2.54	AA-	91 to 180 days	1,000,000	1,000,000	18,859	2,088
TOTAL			**57,000,000.00**						**57,000,000.00**	**57,000,000.00**	**555,521.39**	**83,266.85**

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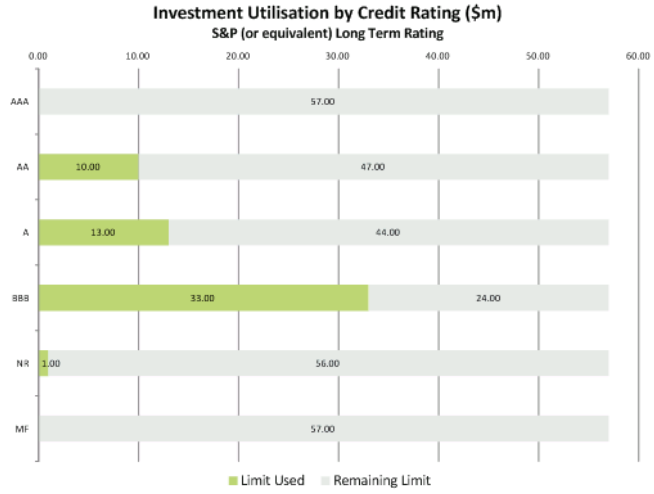
Section 3: Limit Compliance Reports as at 30 November 2019

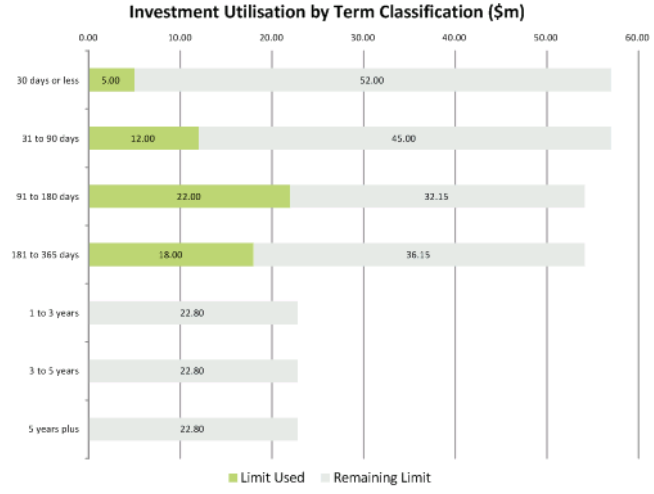
S&P Long Term Rating

Rating	Available		Used		Remaining	
	% Limit	$m Limit	% Limit	$m Limit	% Limit	$m Limit
AAA	100.00%	57.00	0.00%	0.00	100.00%	57.00
AA	100.00%	57.00	17.54%	10.00	82.46%	47.00
A	100.00%	57.00	22.81%	13.00	77.19%	44.00
BBB	100.00%	57.00	57.89%	33.00	42.11%	24.00
NR	100.00%	57.00	1.75%	1.00	98.25%	56.00
MF	100.00%	57.00	0.00%	0.00	100.00%	57.00



Term Classification

Classification	Available Limit		Limit Used		Remaining Limit	
	%	$m	%	$m	%	$m
30 days or less	100.00%	57.00	8.77%	5.00	91.23%	52.00
31 to 90 days	100.00%	57.00	21.05%	12.00	78.95%	45.00
91 to 180 days	95.00%	54.15	38.60%	22.00	56.40%	32.15
181 to 365 days	95.00%	54.15	31.58%	18.00	63.42%	36.15
1 to 3 years	40.00%	22.80	0.00%	0.00	40.00%	22.80
3 to 5 years	40.00%	22.80	0.00%	0.00	40.00%	22.80
5 years plus	40.00%	22.80	0.00%	0.00	40.00%	22.80



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Section 4: Counterparty Exposures as at 30 November 2019

Issuer	S&P Long Term Rating	Available		Used		Remaining	
		% Limit	$m Limit	% Limit	$m Limit	% Limit	$m Limit
AMP LTD	BBB+	30.00%	17.10	10.53%	6.00	19.47%	11.10
AUST AND NZ BANKING GROUP	AA-	40.00%	22.80	3.51%	2.00	36.49%	20.80
BANK OF QUEENSLAND LTD	BBB+	30.00%	17.10	7.02%	4.00	22.98%	13.10
BENDIGO AND ADELAIDE BANK	BBB+	30.00%	17.10	5.26%	3.00	24.74%	14.10
COMMUNITY CPS AUSTRALIA LTD	BBB	30.00%	17.10	3.51%	2.00	26.49%	15.10
COMMUNITY MUTUAL LTD	NR	5.00%	2.85	1.75%	1.00	3.25%	1.85
CREDIT UNION AUSTRALIA LTD	BBB	30.00%	17.10	5.26%	3.00	24.74%	14.10
DEFENCE BANK LTD	BBB	30.00%	17.10	3.51%	2.00	26.49%	15.10
MACQUARIE GROUP LTD	A	30.00%	17.10	22.81%	13.00	7.19%	4.10
MEMBERS EQUITY BANK LTD	BBB	30.00%	17.10	10.53%	6.00	19.47%	11.10
MYSTATE LTD	BBB+	30.00%	17.10	8.77%	5.00	21.23%	12.10
NATIONAL AUSTRALIA BANK LTD	AA-	40.00%	22.80	8.77%	5.00	31.23%	17.80
POLICE FINANCIAL SERVICES LTD	BBB+	30.00%	17.10	3.51%	2.00	26.49%	15.10
WESTPAC BANKING CORP	AA-	40.00%	22.80	5.26%	3.00	34.74%	19.80

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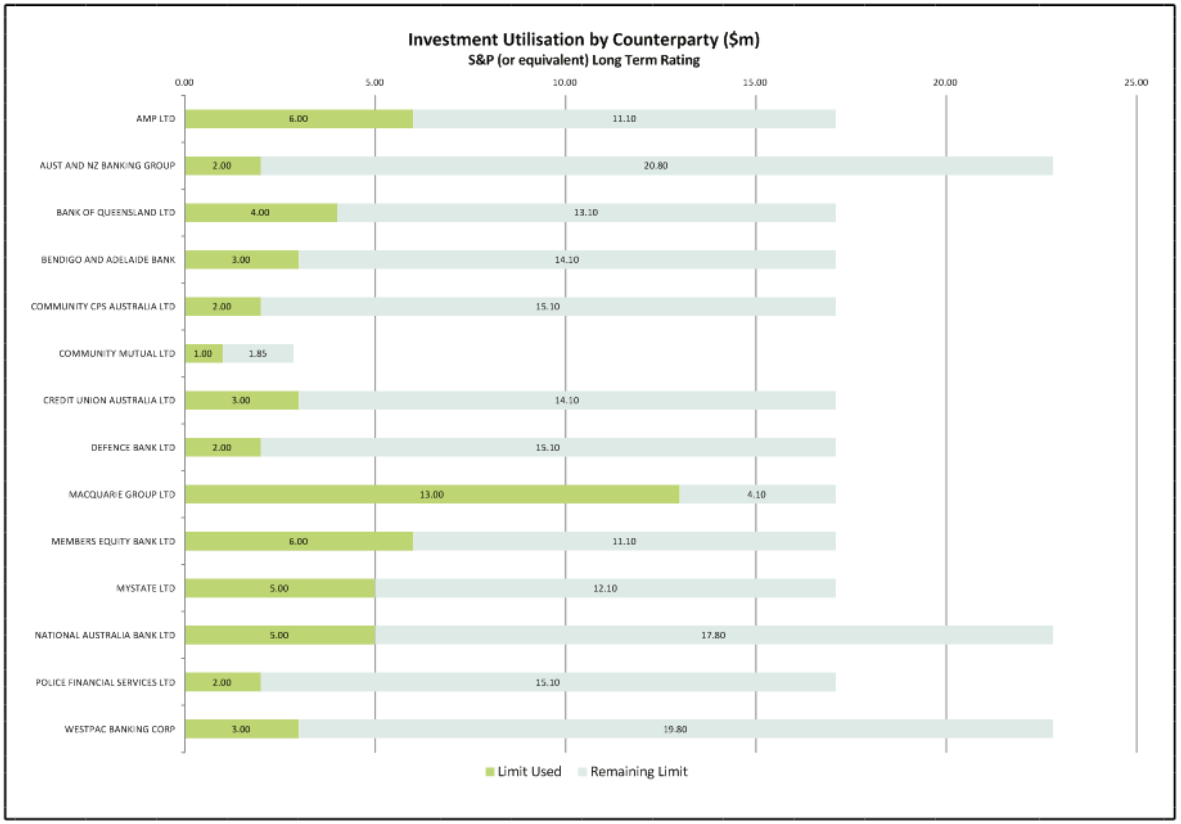
Section 4: Counterparty Exposures as at 30 November 2019



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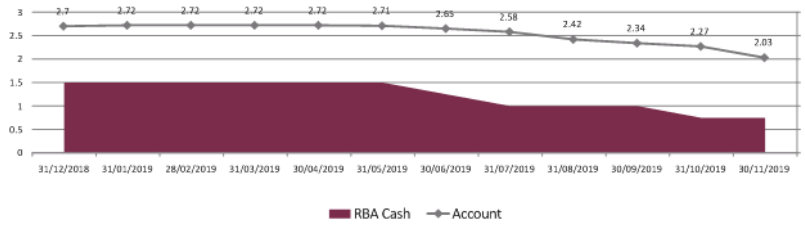
Section 5: End of Month Performance as at 30 November 2019

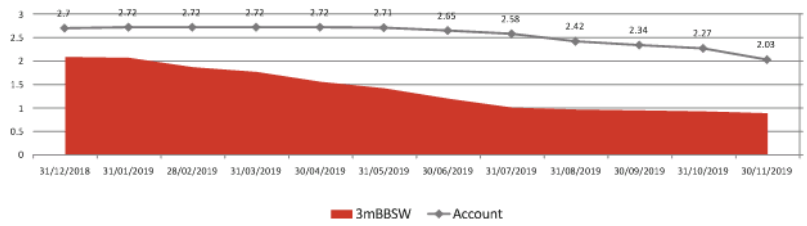
Account vs RBA Cash

Term	Account	RBA Cash	Outperformance
1m	2.03%	0.75%	1.28%
3m	2.21%	0.83%	1.38%
6m	2.38%	0.96%	1.42%
12m	2.55%	1.23%	1.32%



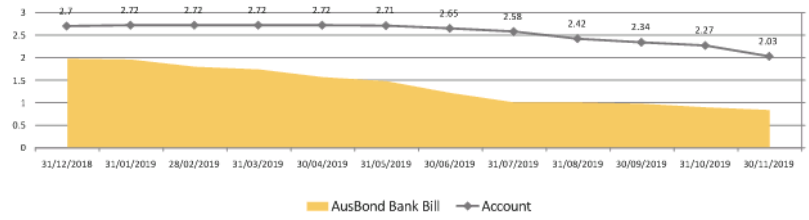
Account vs 3m BBSW

Term	Account	3mBBSW	Outperformance
1m	2.03%	0.89%	1.14%
3m	2.21%	0.92%	1.29%
6m	2.38%	0.99%	1.39%
12m	2.55%	1.39%	1.15%



Account vs Bloomberg AusBond Bank Bill Index

Term	Account	AusBond Bank Bill	Outperformance
1m	2.03%	0.84%	1.19%
3m	2.21%	0.91%	1.31%
6m	2.38%	0.99%	1.39%
12m	2.55%	1.37%	1.17%



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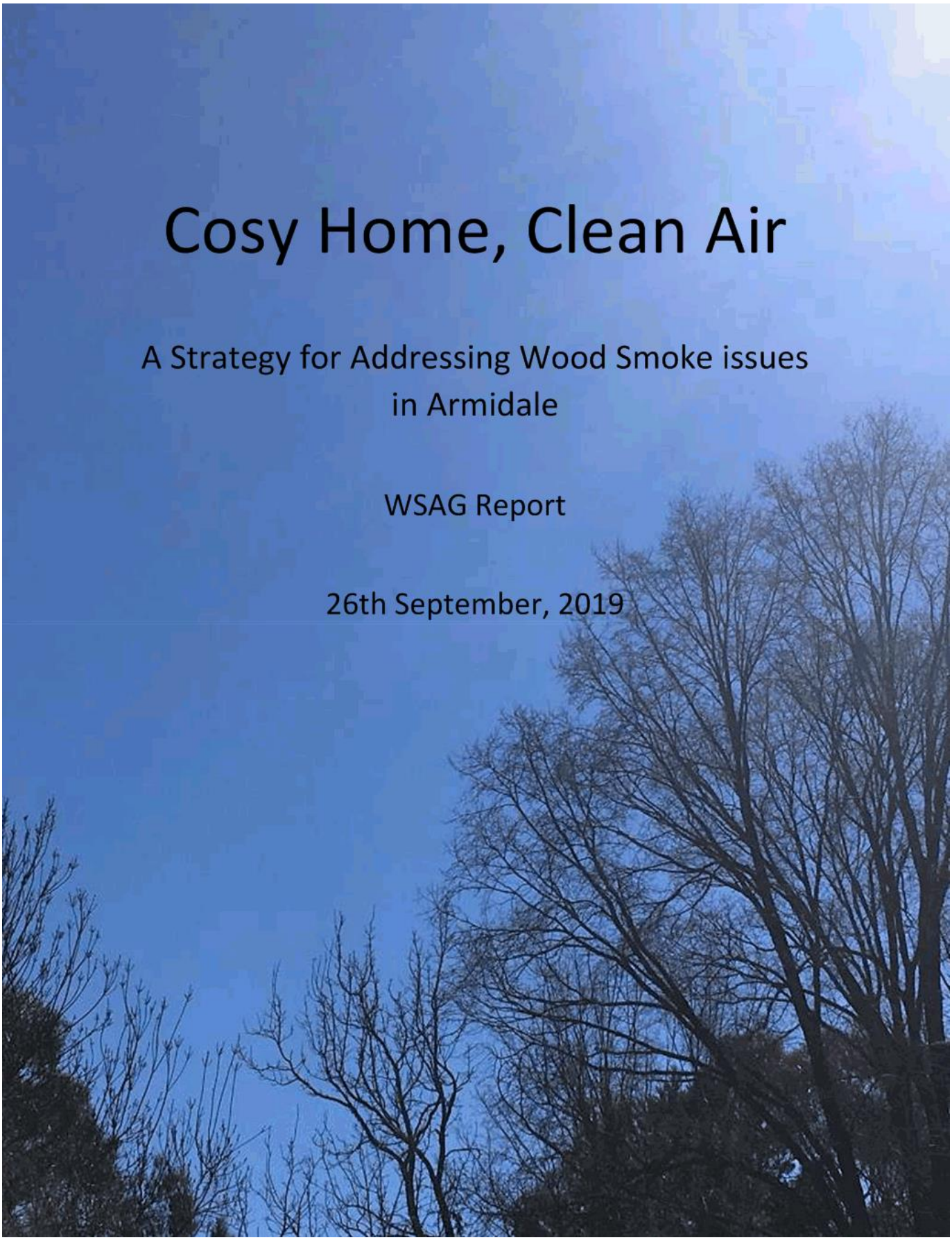
Section 6: Transactions from 1 November to 30 November 2019

Date	Contract Number	Investment Type	ADI / Security Name	Amount	Debit / Credit	Transaction Type	Transaction Detail
28/11/2019	043063	Term Deposit	MACQUARIE BANK	8,000,000.00	Credit	Principal	New investment
27/11/2019	036074	Term Deposit	NATIONAL AUSTRALIA BANK LTD	220,000.00	Debit	Interest	Interest
27/11/2019	036074	Term Deposit	NATIONAL AUSTRALIA BANK LTD	8,000,000.00	Debit	Principal	Maturity proceeds
22/11/2019	042950	Term Deposit	MACQUARIE BANK	1,000,000.00	Credit	Principal	New investment
21/11/2019	035821	Term Deposit	WESTPAC BANKING CORP	27,153.42	Debit	Interest	Interest
21/11/2019	035821	Term Deposit	WESTPAC BANKING CORP	1,000,000.00	Debit	Principal	Maturity proceeds
14/11/2019	042781	Term Deposit	NATIONAL AUSTRALIA BANK LTD	2,000,000.00	Credit	Principal	New investment
14/11/2019	035823	Term Deposit	NATIONAL AUSTRALIA BANK LTD	54,094.79	Debit	Interest	Interest
14/11/2019	035823	Term Deposit	NATIONAL AUSTRALIA BANK LTD	2,000,000.00	Debit	Principal	Maturity proceeds
7/11/2019	042677	Term Deposit	NATIONAL AUSTRALIA BANK LTD	1,000,000.00	Credit	Principal	New investment
7/11/2019	035824	Term Deposit	NATIONAL AUSTRALIA BANK LTD	26,531.51	Debit	Interest	Interest
7/11/2019	035824	Term Deposit	NATIONAL AUSTRALIA BANK LTD	1,000,000.00	Debit	Principal	Maturity proceeds
1/11/2019	042560	Term Deposit	MYSTATE BANK LTD	1,000,000.00	Credit	Principal	New investment



Cosy Home, Clean Air

A Strategy for Addressing Wood Smoke issues in Armidale

WSAG Report

26th September, 2019

Wood Smoke Advisory Group Report

Contents

1. Introduction – what and why 3
2. Executive summary of report 4
3. Background 5
   3.1 Wood Smoke Issue 5
   3.2 History 7
   3.3 WSAG 10
4. Discussion points 11
   4.1 Boundaries & limitations 11
   4.2 Community awareness and feedback 14
   4.3 Heating options 15
   4.4 Housing stock 22
   4.5 Education & Behaviour 24
   4.6 Monitoring 26
   4.7 Legislation 28
5. Recommendations 31
   5.1 Packages 31
   5.2 Funding 33
   5.3 Short, medium & long term directions 34
6. Appendix 35
   6.1 Recommendations by Section 35
   6.2 Terms of Reference for WSAG 37
   6.3 Council proposed amendments to WSAG 38
   6.4 Background Report 39
   6.5 References 40

1. Introduction – what and why

The Wood Smoke Advisory Group (WSAG) was formed in late 2018 by Armidale Regional Council (ARC) Mayor, Simon Murray. Assorted members of the community were invited to join the reference group in order to "review information about Armidale's air pollution and wood heating and to clearly define what Council's role should be in addressing this issue."[1] Concern for wood smoke emissions and air quality have been seen as an issue in Armidale for some years, and whilst various options to address the issue have been discussed, and in some cases implemented, none have to date succeeded in significantly reducing the problem.

Much has been written, discussed, presented and debated over the issue locally for several decades. Suggestions have been made, but little action taken. We are not attempting to repeat all this information here, but, agreeing that there is a particulate problem as the result of wood heating, bring it all together for a constructive strategy for moving forward. The most important change, however, is to see the issue as a health problem, rather than just a pollution problem. In this regard, taking action may get taken more seriously and trigger more imminent action to resolve the problems.

- This report aims to focus on strategies to reduce, alleviate and prevent the issues at hand specific to air pollution, and the potential health impediments that result, from the use of wood heating.
- The debate is not whether there is a problem, but rather the community's perception and understanding of the problem, and what we can do about it.
- It is not about taking away the right to have a wood heater but rather about ensuring the right to have a healthy, clean-air environment.

As such, as members of WSAG, we have not come to a 100% consensus on the best set of solutions to move forward. Rather, the proposed strategy is an amalgam of the majority views of the group while taking into account the overall views. Some things that were included and some that were omitted are a compromise on the opinions of the group as a whole.

The WSAG has met from late 2018 to August 2019, and considered the available data, documents and an array of supporting information – both pro and con – in an attempt to provide an unbiased and objective set of recommendations to address the issues. This also included information from other councils in Australia and New Zealand that have had varying levels of success addressing the same issues in relation to air pollution from domestic wood fire heaters. As a result, WSAG has come up with a package of recommendations that we believe can best address these issues with an equitable, viable, sustainable and effective solution specific to Armidale. These are broad based only – as a volunteer group we are not in a position to drill down into the detail of how these strategies can be delivered, though general suggestions are included in the recommendations. We believe this approach will assist Council in developing a realistic strategy to meet the National Air Quality Standards and reduce Armidale's wood smoke problems. Ultimately, it will be up to Council to take on board these recommendations and implement a program to improve the air quality in Armidale as a result.

Mahalath Halperin, WSAG Chair
06 August, 2019

[1] Mayor's Letter of Invitation to members to join WSAG, 05 September, 2018

2. Executive summary of report

For many winters, there has been a significant wood smoke problem in Armidale. Largely a result of the topography of the valley, it creates an inversion layer of the smoke generated by wood fires, especially on typically cold still winter nights. There are many nights when the national permissible levels of PM2.5, ie particulates in the air, is exceeded. The fundamental shift in attitude must be that this needs to be treated as a health issue, rather than a pollution issue. It is not about taking away the right to have a wood heater but rather about ensuring the right to have a healthy, clean-air environment.

Various programs, discussions and policies have ensued over the years to address the issue, but none with outstanding success. As a working group, WSAG has revisited these programs, as well as those in other jurisdictions both in Australia and New Zealand, to determine the best way forward for our specific situation here in Armidale. We are not attempting to repeat all this information here, but, agreeing that there is a particulate problem as the result of wood heating, bring it all together for a constructive strategy for moving forward.

Focussing on strategies to reduce, alleviate and prevent the issues at hand specific to air pollution and the potential health impediments that result from the use of wood heating, WSAG has arrived at a broad base of strategies and ideas to guide Armidale Regional Council in successfully resolving this issue.

A three pronged approach is needed, namely –

- Education
- Replacement
- Enforcement

Education centres around a range of issues from the broader aspect of raising awareness on the issue of wood smoke as a health issue, to the more specific process of correct operation of wood heaters. In between is education on keeping warm and behavioural changes within the home. An initial survey of the current status of awareness and understanding will help reignite the conversation within the community. All discussion with the community needs to be well-worded and non-aggressive in order to give it traction without resistance.

Replacement of existing wood heaters is unresolved as to whether this should still – and/or ultimately long-term – include wood heaters or only other forms of heating. To this end, any replacement program needs to include incentives and/or rebates to upgrade housing infrastructure to help retain heat generated, as well as maximise the benefits of Armidale's typically sunny winter days. Otherwise, simply replacing heaters with better ones is partially a waste of money and fuel. Rather, it can reduce the overall heating needs and thus make heater-selection options more viable. A range of relevant heating options and associated fuels has been discussed within the report.

Funding will need to be investigated to enable delivery of educational programs, as well as rebates for new heaters and housing infrastructure. Funds to cover the costs of Smoke Rangers (either existing staff with additional roles or even a new position) and enforcement will also be needed, and ongoing monitoring kept up-to-date and the public informed of the data. The opportunity to work with other organisations, such as NGOs, retailers, schools and local environmental and welfare bodies should be maximised.

Ultimately, this must be treated as a holistic, long-term program, with immediate action centred around education, broadening to longer-term actions including replacement of high-polluting heaters. Education and transition periods will be needed, but with advocacy, responsibility, accountability and monitoring by Council, the ultimate outcome of a cleaner and healthier Armidale has to remain the long-term objective.

3. Background

3.1 Wood Smoke Issue

It is generally acknowledged that within the CBD area and immediate surrounds of the city of Armidale, there is a significant – and dangerous – wood smoke problem during winter months. There are many occasions on which the air quality exceeds the acceptable levels as determined by the EPA and in line with the National Air Quality Standards.[2] (refer Diagram 1)

This is caused by a combination of topography – the valley in which Armidale sits – and the way in which wood heaters are used. With sub-zero overnight temperatures and high pressure meteorological conditions, the resultant inversion layer sits over the city creating potentially serious health risks to inhabitants.

	2008	2009	2010	2011	2012	2013	2014	2015
May	-	4	6	4	no data	3	7	2
June	-	7	10	6	7	7	2	10
July	5	6	10	8	9	no data	2	3
August	3	7	8	7	2	2	4	11
September	0	1	3	3	0	0	0	
						NB: 29 days offline in this period	NB: 37 days offline in this period	

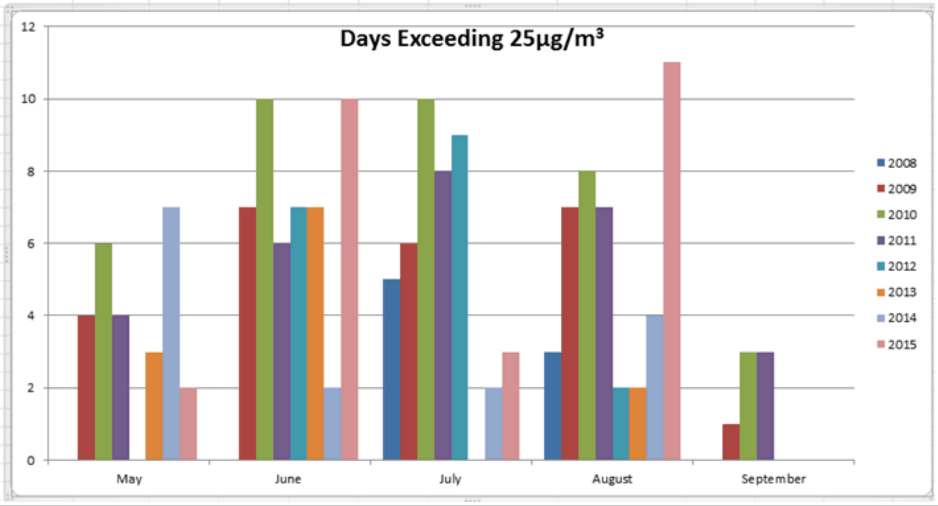


Diagram 1: Excerpt from DustTrak master data collected from roof of Armidale Council Administration Building

Wood heating is a popular form of space heating in Armidale and can be efficient when used correctly. Wood fires also have psychological and social benefits of perceived warmth. There is also the opportunity for many to obtain 'free' wood, anecdotally estimated as up to 50% of wood used in Armidale is collected by residents or their families. This makes wood more cost effective than other heating fuels.

Consideration has been given to the following –

1. There is sound evidence that wood heaters are a major source of PM2.5
2. Exposure to PM2.5 at levels exceeding national air quality standards is associated with adverse health effects
3. There is concern among the local community with PM2.5 levels often exceeding acceptable levels

[2] OEH Air Quality Monitor Armidale summary Dec 2018, www.environment.nsw.gov.au/AQMS/search.htm

4. Determination of the level of community perception of whether it is or isn't an issue; and if perceived as yes, are they willing to act on it?
5. What are the barriers to change?
6. What actions will give the greatest reduction in wood smoke issues – ie education vs incentives vs physical changes – or should it be a combination thereof?
7. Consciousness of potential issues of energy poverty – ie what happens to those no longer able to access free heating supplies.

Health effects associated with wood fire burners

Quantifying the health effects associated with exposure to wood fire smoke is challenging due to the varying composition and concentrations of physical and chemicals substances in the emissions. Factors contributing to these variations[3] include

- the type, age and condition of the heater
- the type, quality and characteristics of the wood used in the heater
- and the operation of the heater by the user

Also contributing to the challenge is the fact that wood fire smoke is only one source of particulate matter and air pollution. Established sources of air pollution include vehicle and industrial emissions, agricultural spraying, dust and bush fires.

Determining with certainty the health effects associated with PM2.5 levels observed in Armidale would require analysis, controlling for all known factors contributing to health outcomes associated with exposure to air pollutants. Without this, extrapolating from published data is the next best option, however, limitations of doing so must be noted. The main limitation being the inability to control for environmental, individual and population level characteristics that influence associations between exposure to particulate matter and adverse health outcomes. The literature on the human health effects of exposure to air pollution is largely from ecological studies that examine air pollution level and health effects at a population level, without being able to adjust for individual exposure levels. Further, these studies are not necessarily from the local situation. Such studies quantify exposure based on average levels of the air pollutant measured in the environment, and often do not take into account other individual factors known to be associated with outcome of interest. While such studies are useful in generating hypotheses and identifying potential public health concerns, the findings cannot and should not be used to make conclusions on the health of individuals.

Despite these limitations, there is sufficient published evidence to suggest that exposure to residential wood fire smoke and PM2.5 is associated with cardiovascular and respiratory illness.[4] Along with other extensive research[5] (which is not the purpose of this report to repeat here) the broad acceptance that wood smoke is a health issue is why local, state, and national governments have developed policies to limit emissions and mitigate the negative health effects associated with particle exposure. And therefore the urgency for Armidale Regional Council to do likewise.

That said, it is important to use the right wording when addressing the issue. A positive approach – ie one focused on better air quality and the community's ability to cope with cold winters in a good way will be more productive than just focusing on eliminating wood smoke because it is bad for our health. There is ultimately a cost benefit if we put a value on the overall health of the community, but the average resident with their wood heater can't necessarily see that benefit if the funds simply don't exist to pay for alternative energy bills.

[3] Refer assorted referenced documents throughout this report and also as listed in the Appendix
[4] Naeher, Brauer et al. 2007
[5] For example, Barregard, L., et al. (2006). "Experimental Exposure to Wood-Smoke Particles in Healthy Humans: Effects on Markers of Inflammation, Coagulation, and Lipid Peroxidation." Inhalation Toxicology **18**(11): 845-853; Naeher, L. P., et al. (2007). "Woodsmoke Health Effects: A Review." Inhalation Toxicology **19**(1): 67-106.

3.2 History

Past and present actions and policy in Armidale

Various attempts have been made by the Council over the past decades to address the issue. Current ARC policy relating to local air quality is set out within POL134 – Regulatory – Policy for Sustainable Domestic Energy Use and Local Air Quality (incorporating Local Approvals Policy for Solid Fuel Heaters) Version V; adopted by Council in May 2013.[6] The preamble to the policy document briefly describes the measures taken since the mid-1990s in this area -

1. Established a community reference group (now a full advisory Committee to Council) to assist with appropriate policy direction and implementation
2. Provided significant financial incentives, such as interest free loans and subsidies for insulation and new heating systems
3. Undertaken a range of public education and related media programs on domestic energy efficiency, including the construction of a display home
4. Obtained related Government funding to supplement local program resources
5. Monitored air quality in Armidale and regularly reported the results to the community
6. Conducted smoke patrols and issued abatement notices for excessively smoking chimneys
7. Maintained a dialogue with relevant Government agencies and industry groups, including making submissions for future actions and initiatives

Many of these measures were implemented in 1994 when Armidale City Council adopted an Energy Efficiency Action Plan for Armidale which had the following vision statement:

"To achieve national recognition for New England as the leader in energy efficiency practice for rural Australia by the year 2000."[7]

Whilst wood smoke was not the primary focus of this plan, increased energy efficiency was seen as potentially providing a "win-win" solution in terms of reducing heating requirements and hence smoke. Incentives, in the form of interest free loans of up to $3000, were provided for installation of energy-efficient equipment (e.g. reverse-cycle air conditioning and solar and heat pump hot-water heaters) and for home insulation. Public information (monitoring of air quality in Armidale began in 1996) and education programs were also integral to the plan.

The pursuit of the vison was, however, short-lived and the incentive schemes and the momentum of public education work had largely petered out by the end of the 1990s. Since this initial drive for energy efficiency, action has been more focused upon the specific issue of wood smoke, but that action has been periodic and somewhat piecemeal. Examples include:

- Rebates to households of up to $1000 to replace wood heaters with an alternative form of heating (as part of the NSW Government' s Woodsmoke Reduction Program in the early 2000s)
- Provision of information and educational material via the Lifestyle2350 website and Facebook page (both of which now appear to be defunct)
- Allowing users to borrow a moisture meter from the library to enable them to check the moisture content of fuel wood
- Providing a 20% discount on chimney cleaning for a short period of time in 2013

6 https://www.armidaleregional.nsw.gov.au/ArticleDocuments/499/INT%20Policy%20for%20Sustainable%20Domestic%20Energy%20Use%20and%20Local%20Air%20Quality%20incorporating%20Policy%20for%20Solid%20Fuel%20Heaters%202013%20REVIEWED%20VERSION.pdf.aspx.

7 *State of the Environment Report 1997* , Armidale City Council (1997)

- Early morning smoke patrols, checking that chimneys were not emitting excessive smoke

More specific control is detailed within POL134. Any domestic solid fuel heater installed must be approved by Council and conform to an emission standard of between 2.5 and 3.0g/kg depending on location. The Council also has powers to remove or replace such heaters if installed without approval, as well as issuing fines for non-approved installations. The policy document also details a series of stepped actions that can be taken against households which are observed to consistently emit excessive smoke. Such steps include written warnings, education and ultimately a penalty of $3300 (however, the extent to which these more punitive measures have been employed by the Council appears to be low, possibly because there is limited political will to do so).[8]

Measures undertaken elsewhere

Canberra: Wood Heater Replacement Program

In 2004 the ACT Government introduced a rebate to assist households replace wood heaters with alternate heating systems. The scheme resulted in the removal of 1135 wood heaters by 2017 and replacement with reverse cycle systems (although a relatively recent article in the Canberra Times quotes a government spokesman as stating that new wood heater installations are, "*increasing rather than decreasing*").[9] The current level of rebates on offer are:

- $250 for wood heater removal or decommission
- $1250 for wood heater removal and installation of ducted electric reverse cycle system
- $750 for wood heater removal and installation of electric reverse cycle split system
- $750 for wood heater removal and upgrade of electric reverse cycle system[10]

Launceston: Wood Heater Replacement Program

Launceston, like Armidale, is located in a valley and suffers from similar inversion events which trap air pollution over the city. It is estimated that 60% of households used wood heaters in the 1990s, with the absolute number of heaters reaching 17,500 in the year 2000.[11] From 2001 to 2004 a Wood Heater Replacement Program was implemented offering households up to $500 to replace wood heaters with alternative (gas and electric heating systems). Other interventions were run alongside this program; education and advertising by the local council are thought to have contributed to reducing pollution by improving the operation of remaining wood heaters, and; environmental officers monitored chimneys, offered targeted education were appropriate and were empowered to serve infringement notices to households which continued to emit excessive smoke. When the programme finished a significant improvement in wintertime air quality had been achieved and the number of households with wood heaters had fallen to 30%.[12] The improvement in air quality can be translated into the avoidance of approximately 30 premature deaths every year for the city's population of 70,000.[13]

Whilst this program has undoubtedly been successful there is some evidence of an increase in use of wood heaters in recent years. With significant prices rises on electricity and gas, there is anecdotal evidence from Council that some people are reverting to firewood as a low-cost option, particularly for those on lower incomes for whom heating costs form a larger proportion of household income.

[8] *Wood Pellets Stoves for Pollution and Green House Gas Reduction*,
D Carr, I Reeve, S Andres, D Robinson, (2013) RIRDC Publication No. 12/065

[9] https://www.canberratimes.com.au/story/6021798/wood-fires-still-popular-in-canberra-despite-suburban- bans/

[10] https://www.energy.gov.au/rebates/wood-heater-replacement-incentive

[11] *Evaluation of interventions to reduce air pollution from biomass smoke on mortality in Launceston, Australia: retrospective analysis of daily mortality*
F Johnston, I Hanigan, S Henderson, G Morgan, (2013). 1994-2007. *BMJ : British Medical Journal, 346*, e8446. doi:10.1136/bmj.e8446

[12] *Woodheaters in Launceston—impacts on air quality. Department of the Environment and Heritage, 2005:52*. CSIRO Atmospheric Research. (2005). https://www.environment.gov.au/system/files/resources/1056c046-eb25-4d75-9aa4-1dd87db6a79a/files/launceston-woodheaters.pdf

[13]https://theconversation.com/everyone-loves-a-wood-burning-heater-but-is-the-harm-worth-it-13536

Christchurch (NZ): Clean Heat Project (CHP)

Widespread use of wood heaters and open fires (and again, topography) resulted in high PM_{10} concentrations in Christchurch into the 1990s (in 1999 there were estimated to be 57,000 of these appliances in use).[14] Measures to combat air quality issues have been in place since the 1970s (such as a ban on installation of open fires and emission limits on solid fuel burners), however, these failed to halt increases in the number of exceedances of government PM10 thresholds.

The CHP was initiated in 2003 and it main thrust was to provide financial incentives to encourage households to improve levels of insulation and convert to cleaner, alternative heating. Through the scheme, and as a result of accompanying measures (educational and informational campaigns) about 34,000 open fires and solid fuel burners had been replaced by the end of 2009 and this was coincident with a 71% decrease in PM_{10} emissions over the period 2002 to 2009.

Whilst the CHP no longer operates a variety of other measures have been put in place which include:

- Stringent control of the types of burners that can be installed in homes, for example only ultra-low emission burners can be installed as from the beginning of 2019, and burners older than 15 years must be replaced;
- Financial assistance is available for heater replacement for; those on low incomes (subsidies of up to NZ$5000), and; via a fixed low interest loan of up to NZ$6000 which is added to the householders rates bill and repaid over a period of up to nine years.[15]

What is effective?

This is brief overview of measures taken elsewhere is by no means definitive in coverage, but it does suggest that improving air quality is dependent upon implementing, and maintaining a consistent set of integrated tools over a long period of time. Financial incentives are effective, as long as they are provided at a sufficiently high level, and are accompanied by consistent educational and informational programmes which bang home messages about poor burning practices, old and inefficient heaters, and the use of good dry wood, in addition to the health consequences of poor air quality. Over time then receptivity to more stringent restrictions on types of heaters used may become more socially acceptable.

A major challenge to the success if these types of programmes will be a continuation of high energy prices in Australia.

[14] *Impacts of residential heating intervention measures on air quality and progress towards targets in Christchurch and Timaru, New Zealand.*
A Scott, C Scarrott, (2011) *Atmospheric Environment, 45*(17), 2972-2980.
doi:https://doi.org/10.1016/j.atmosenv.2010.09.008

[15] https://ecan.govt.nz/your-region/your-environment/air-quality/home-heating/

3.3 WSAG

The Wood Smoke Advisory Group (WSAG) was formed by invitation from ARC Mayor Simon Murray in 2018. Comprising a group of community members, including academics and industry-related persons, the group was formed to address the issues of air quality in relation to wood smoke, as noted above. Terms of Reference were developed as guidelines to carry out the work required (refer Appendix 6.3).

As a committee appointed by the mayor, it is not a Council Committee, with no Councillors involved and not beholden to Council as such. Nonetheless, issues raised by Councillors in the Council's December 2018 meeting have been addressed as considered appropriate by the WSAG (refer Appendix 6.4).

Members are as follows –

Ms Mahalath Halperin (Chair) – Architect & Environmental Consultant, Mahalath Halperin Architects
Dr Navjot Bhullar – Assoc Prof Community & Applied Psychology, UNE
Mr Dave Carr – Southern New England Landcare Ltd
Mr Peter Ducat – Community member, former Ducats Earthmoving, Armidale
Mr John Grills – Barbecue Galore, Armidale, Representing Australian Home Heating Association (AHHA)
Dr David Hadley – Senior Lecturer in Agricultural Economics, UNE
Prof Don Hine – Professor, School of Psychology and Behavioural Science, UNE
Dr Jeffrey Kirkland – Lecturer & Lab technician, Chemistry & Environmental & Rural Sciences, UNE
Dr Geetha Ranmuthugala – Prof & Head of School Rural Medicine, Epidemiologist, UNE

Figure 1: Armidale Aerial photo, ~1995 (MHA)

4. Discussion points

4.1 Boundaries & limitations

While it would be ideal to address all the issues relating to wood smoke and air quality, including now and into the long term future, the WSAG decided that in order to reach some tangible options, the core recommendations would focus on the following –

- Only addressing the issue of wood smoke within an approximate Armidale city boundary (refer Diagram 2), though bearing in mind that where smoke accumulates is not necessarily where it is generated.
- Only addressing wood smoke and air quality issues generated by housing. Other sources such as The Armidale School's coal-fired burner for example, outdoor open fires, or pollutants from motor vehicle emissions, were not considered.
- Focusing on existing installed heaters, though recommendations are included for renovated, new and future housing stock.
- Focusing on changes to wood heating use from a health and pollution aspect only, ie not addressing resource depletion (ie firewood), or changing weather patterns or demographics, both of which may influence heating requirements long term.

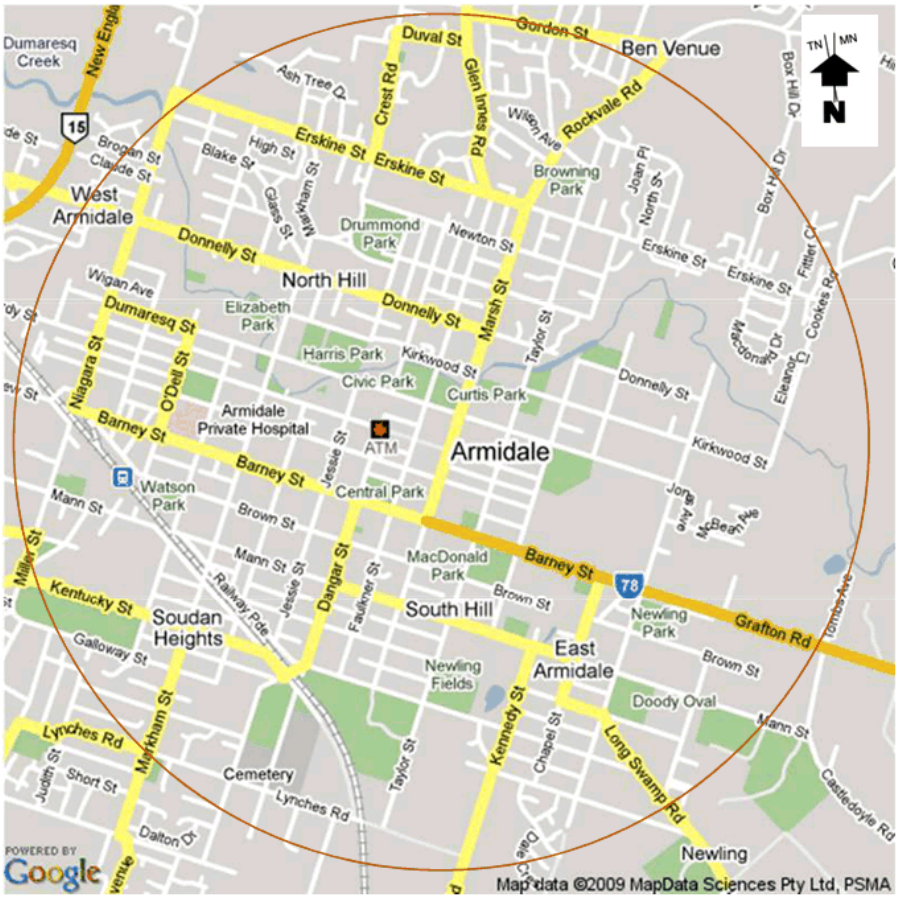


Figure 2: Map of Armidale showing general area affected by wood smoke

In this way it is believed that tangible outcomes can be achieved, with long term planning to eventually address the issue in total. It is understood that the core of the problem in Armidale is existing older heaters. While realising that these existing heaters will eventually fail and need replacing with either new heaters or alternative forms of heating, in the meantime they are the generators of the current emissions problems. Based on observations of smoking chimneys and anecdotal evidence, it would be a fair estimate that it is 10% of the current heaters that are causing 80% of the current problem, though this may on the one hand increase with aging appliances, but be offset with replacement of newer, more efficient, appliances. The implication, therefore, is that if we can fix 10% of the heaters, we can fix a large amount of the problems.

The adoption of a formal Air Shed may assist in defining where the issues are and how they might be addressed. This has been adopted in other communities as a way of dividing the region into physical areas where each Air Shed has maximum allowable level of pollutants such as PM2.5 emissions. Once these levels are exceeded, the Air Shed is deemed to be 'full' and no further emissions are permitted – though how that is achieved is open to debate. However, Armidale's affected area may not be large enough to divide and may simply constitute a single Air Shed, with the appropriate limitations still applied.

National figures from AHHA indicate that whereas 20 years ago, heater sales were around 60,000 – 70,000 annually, they are now currently around 33,000 – 38,000 per year[16], indicating a reduction in heater sales. However, this is not necessarily indicative of known sales in Armidale which are fairly static. In the meantime, wood heater sales in Armidale have included better appliances, with the best three regularly sold appliances rated at 1.5 ppm emissions.[17] However, this does not reflect heaters purchased second hand (including on social-media sale websites) or those purchased from outside Armidale. Formal wood sales have fluctuated but are not necessarily indicative of use as the data does not include wood freely sourced, nor take into account warmer vs cooler winters. (refer Table 1)

Year	Total sales	Remarks
2009	1,700	Calendar year
2010	1,600	Calendar year
2011	2.770	Calendar year
2012	2,690	Calendar year
2013	1,130	Part – Jan to July only
2014-2015	2,100	Financial year
2015-2016	2,200	Financial year
2016-2017	2,200	Financial year
2017-2018	1,800	Financial year

Table 1: Firewood Sales in Armidale as supplied to FAA (Firewood Association Australia), date supplied by P Ducat.

However, changes in purchasing behaviour (of appliances and fuel) may also reflect a combination of alternative forms of heating now available (mostly notably reverse cycle air conditioners and the promotion of roof-top solar energy systems) and the decreasing length and overall severity of winters.

Data for 2018 shows that while approximately 100 - 150 wood heaters were sold during the year, ARC received 50 Section 68 Applications for installation during the same period[18]. This implies that approximately either half the heaters were installed beyond the required Section 68 approval area – or that purchasers are not submitting applications or approval upon installation. The majority of applications that are submitted are installed by qualified installers, mostly being Peter Fittler Plumbing, therefore ensuring correct installation procedures are followed.

[16] Bruce Mogg, AHHA, Operation & Management of Wood Heaters, CASANZ 2019
[17] Data from Barbecues Galore Armidale, J Grills 2019
[18] Data from Barbecues Galore Armidale, J Grills 2019

Additionally, a small number of Pellet heaters have been sold and installed in Armidale – refer later discussion (Section 4.3) as to operation and benefits.

How do we address rentals and landlords?

The committee also identified the challenges associated with almost a third of dwellings in Armidale being rental properties[19], and the need to provide incentives for landlords to replace existing old wood fire heaters. This is also in combination of many of these rental properties being older and not necessarily well insulated or thermally efficient, thus demanding a higher rate of heating in winter.

Coupled with this is the fact that Armidale has a higher than state average of residents over 65.[20] This may support the argument for a higher need for heating, as well as possible challenges in changing behaviour.

Tenure *Occupied private dwellings*	Armidale Regional (A)	%	New South Wales	%	Australia	%
Owned outright	3,536	34.4	839,665	32.2	2,565,695	31.0
Owned with a mortgage	2,669	26.0	840,004	32.3	2,855,222	34.5
Rented	3,704	36.1	826,922	31.8	2,561,302	30.9
Other tenure type	87	0.8	23,968	0.9	78,994	1.0
Tenure type not stated	274	2.7	73,763	2.8	224,869	2.7

Table 2: 2016 Census data showing types of dwelling ownership in Armidale Regional Council area

Recommendations

- That if possible, a database of existing heaters, their make, model and age, be established within the boundary area as a way of benchmarking current and future use
- That Council better promote the requirement for Section 68 approval for heater installation, working with the retailers at point of sale (though this will not pick up non-local purchases)
- That, if possible, ensure only wood heaters that are compliant with current regulations are available for sale in Armidale; Note that the on-lien second-hand market may be problematic as there is no control over sales
- That any rebate replacement/upgrade program also address rentals with possible incentives for landlords

[19] quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA10130?opendocument
[20] quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA10130?opendocument

4.2 Community awareness and feedback

It has also been determined that while some community attitudes may have changed, it is not clear to what extent – ie is it or is it not perceived as a problem, and if so, how serious a problem; and importantly, are people willing to act on it? Previous surveys and research provide some indication, but it would be advisable to obtain more up-to-date information. A new survey, possibly conducted by UNE researchers, would ensure current information and feedback from the community, and revise an awareness of the issue.

Further, it would be appropriate that once a plan has been developed, that this be put to the community for feedback and input, prior to finalising any decisions. An open forum (such as the monthly SLA forum) might be a suitable venue to discuss the proposals and how Council can move forward with the community to address the issues.

In the meantime, raising awareness within the community is needed. The occasional information in newsletters accompanying rates notices, and in the local paper, are going some way to addressing this. However, a more prominent 'in-your-face' approach is likely to have more impact. This could be in the form of a graph or highlighted PM2.5 levels such as that shown in Table 3 (from the DustTrak monitor and local Purple Air monitors) publicised in a more visual way – such as the LED screen on the corner of the Armidale Ex-services Club (cnr Dumaresq and Dangar Sts), or a similar display somewhere in the Mall. If people are seeing daily that the pollution is off the charts, they may be more inclined to do something about it.

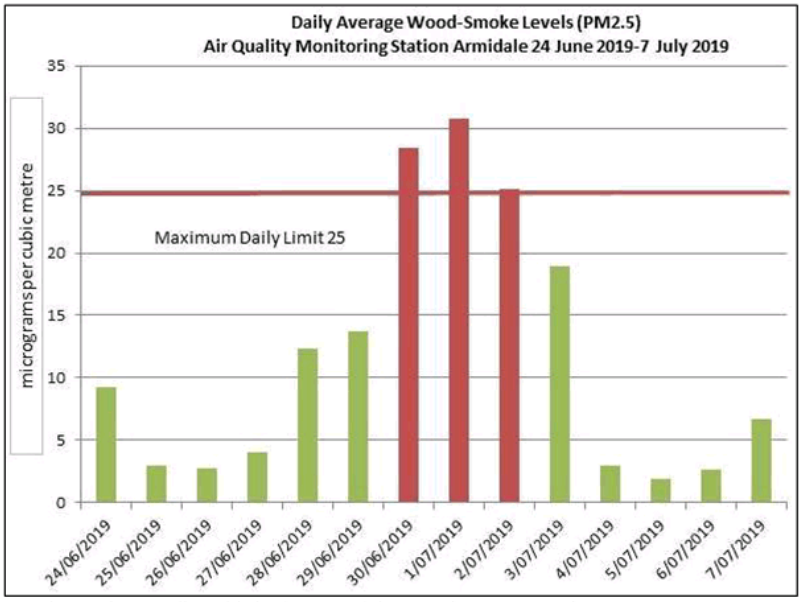


Table 3: Sample graph typically published in Armidale Extra (courtesy ARC)

Recommendations

- That a new survey be conducted to determine the community's level of awareness, perception and understanding of the wood smoke issue; in so doing, the survey itself will reignite the discussion
- That a visual display of daily PM2.5 levels be shown in the Mall and/or on the Armidale Ex-services' external screen
- That once the report and proposed Council strategies are nearing finalisation, that a public forum be held to inform the community and allow for constructive feedback for inclusion

4.3 Heating options

Currently it is estimated that there are between 2,500 to 3,700[21] wood heaters installed in Armidale, being 42%-62% of the approximate 6,000 existing houses in the core of the city. Many of them are not necessarily new and some potentially quite old, especially in rental properties. While it is a minority of these that cause major problems, all wood heaters, including new ones, create emissions to some degree.

Replacing these heaters would need consideration of:

- What to replace them with – the alternative source of heating that would be available and affordable
- Will it still do the same job – the effectiveness of heating houses that are mass produced and/or not designed for the local conditions
- Will it be as / more / less affordable – the cost of replacing the heater and the cost of the alternative fuel (if appropriate)
- Who bears the cost – for rentals in particular
- Will residents 'give up' their wood heaters – willingness of long standing residents of the region to consider alternative heating options

Wood heaters are effective in heating houses overall, and coupled with perceptions of warmth and comfort, are often a preferred option for this reason. However, while upgrading to the most efficient wood heater with reduced emissions output *may* be one option, it is also necessary to consider alternative forms of heating. Even the most efficient heater produces some PM2.5 particulates, and can still be operated poorly, thus the need to ensure education in operation.

Some wood heaters – new and old – have the additional installation of a 'SmartBurn' tube. The steel tube provides a combustion catalyst for wood heaters and is based upon a mixture of natural, non-toxic and non-corrosive ingredients which dissolve existing creosote accumulations whilst preventing further build-ups in the flue. Intended – and marketed as – a chimney flue cleaner, there is no debate that the do result in cleaner flues and chimneys. However, there is some debate as to their effectiveness in reducing emissions – the product claims to provide up to 17% longer wood burn and up to 54% less smoke emissions.[22] Feedback from Peter Fittler Plumbing in Armidale, who do the majority of flue cleaning in Armidale, indicate that the flue systems are significantly cleaner where a SmartBurn has been installed, thus supporting the claims of reduced soot and by implication reduced emissions. Either way, it would seem that those who have installed a SmartBurn are therefore aware of at least creosote build-up issues and consequently aware of their heating behaviour and usage – which can only be a good thing.

Figure 3: SmartBurn Chimney Flue Cleaner

[21] Based on various WSAG discussions and assorted data available
[22] www.smartburn.com.au

Heating Fuels

As well as consideration of types of appliance to provide the necessary warmth, fuel sources, quality and associated costs of operation needs to be considered.

- Some residents are able to source wood themselves and/or 'for free' so cost is not considered an issue. Were these residents required to pay for their fuel, this could be seen as an impost with significantly increased costs.
- However, the availability of 'free' wood is likely to change as wood resources continue to be depleted, which may also in the short term drive users of poor quality wood as a substitute, especially as there is no objective quality control with this method.
- Supply and use of quality wood is a must. However, for those sourcing their own wood, control measures are more difficult. Availability of moisture metres and possibly even a community kiln (to ensure fully wood is fully dried) may assist in this. Pre-empting use – ie having wood at home a season in advance – allows time for it to dry out and then be stored correctly once fully dried.
- Moisture testing of wood might assist in ensuring that only dry wood is used, and encourage residents to ensure it is stacked in a dry location. Again, this would be especially useful for those sourcing their own wood. However, whilst retailers receive wood to a prescribed moisture content, if stored outside prior to purchase from residents, it may become less acceptable than when first delivered. Note that moisture meters are currently available for around $40 from most wood heating retailers. Alternatively, Council currently stock a supply of moisture meters at the Library for residents to borrow (similar to the power meters available).
- Wood needs to be stored correctly – ensuring that wood is stored under cover and off the ground to keep it dry. A competition to build such stores might be an option as an incentive for those currently without suitable storage (note this was successfully carried out in New Zealand[23]), with a load of quality wood being the prize.

Figure 4: Woodshed ideas from Nelson Woodshed competition (www.nelson.govt.nz)

- Australian wood heaters rely on hardwood for successful operation. While there have been some ultra-low emission burners (ULEB) developed, these are designed specifically for softwood use (such as in New Zealand) and are also currently considerably expensive (~$10,000). Development of a ULEB that uses hardwood is a future possibility.
- Electricity is also considered to be expensive, though the expense is partially in the grid-connection costs rather than just the energy itself. However, if replacing a wood heater, a reverse cycle air conditioner is likely to be less cost than buying wood, though this is negated by those homeowners who obtain wood for little or no costs, thus making electricity an expensive option.

[23] www.nelson.govt.nz/environment/air-quality/burn-bright/best-little-wood-shed-competition

- Note that many Armidale roofs already have solar panels (PVs) installed, (approximately 2,100 small-scale systems in 2017[24]) with an average size of 3.7 kW (the Australian average is 3.15 kW)[25]. This includes many smaller, older houses, not just new ones. The solar can provide free energy during the day to run air con or feed into a Heatbank, the latter with use of Catch Software (refer later). This diverts the excess power being generated by PVs into the Heatbank prior to feeding into the grid, thus storing excess energy in the form of heat – and no ongoing cost. Additionally, as batteries become more affordable, 'free' electricity then becomes available at night as well.
- Gas is considered an expensive fuel. Only bottled gas is currently (and likely to remain) available in Armidale, with its delivery and hire of tanks adding to the cost of the fuel itself.
- Costs of fuel depends on usage, sourcing and of course how well the house retains any heat generated.
- However, overall costs also need to be taken into consideration – ie initial cost of appliance vs ongoing fuel costs.
  - Gas, for example, also includes cost of hiring bottles, though can be complicated if cooking and/or hot water is also involved;
  - Electricity has daily charge rates but all houses likely to be using electricity anyhow;
  - Wood and pellets may incur delivery costs, and non-c0osted factors of labour should be considered;
  - Gas appliances may cost more that a wood heater, which in turn may cost more than a RC air conditioner; Installation costs also need to be taken in account.

Heater type	Fuel	Comparative costs per annum $ based on 4 months usage	
Wood heater	wood	600-900 [1]	Or free if sourced independently
RC Heat pump	electricity	160-200 [2]	Or free to preheat from PVs
Convection	electricity	450-550 [3]	Or free to preheat from PVs
Radiant	electricity	600-800 [4]	Or free to preheat from PVs
Heatbank	electricity	430-500 [5]	Or free to store heat from PVs Also able to run on off-peak
Gas	bottled LPG	400-600	
Pellet Heater	pellets	400-550 [7]	
Ethanol	bottled ethanol spirit	900-1,500 [8]	

Table 4: Comparative costs of various fuels for heating[26]

NOTES: Assumptions – average cost grid electricity $0.30/kWh

1: operation morning, evening, overnight, no daytime input but continues to provide decreasing radiant heat

2, 3, 4: evening and morning use, 8 hours energy input

5: average 13 kWh daily to reach capacity, no other input but continues to provide radiant heat 24/7

6: operation morning, evening, overnight, no daytime input

7: operation morning, evening, overnight, no daytime input but continues to provide decreasing radiant heat

8: operation morning, evening, no overnight or daytime input

[24] ABS Quickstats Armidale Regional 2018

[25] www.energymatters.com.au/solar-location/armidale-2350

[26] Variously sourced based on existing bills, data, and feedback from retailers and suppliers

Replacement options

Replacing the existing heaters that collectively create the problem, followed by limiting the installation of new heaters, is the simplest solution – but what with and how? Replacement incentive programs can potentially reduce emissions in a very short time, but need to be balanced with funding opportunities and community willingness to participate. Whereas education programs, ie behavioural changes, may take longer but have surer long-term benefits in that they continue to be employed.

Measure	Emission reductions	Environmental effectiveness	Cost-effectiveness	Simplicity & risks
Education/ "nudge" programs	Potentially significant	Targeted & gains in medium term	Medium	Low risk
Incentives for replacement	"	Targeted & gains in short term	High	Low risk
Common definition of excessive smoke	Small	Targeted but at a very small number of heaters	Uncertain	Medium risk without supporting enforcement
Controls on modification & installation	"	"	"	High risk without supporting enforcement
Controls on 2nd hand heaters	"	"	"	"
Removal of non-compliant heaters	Small to significant	Targeted but gains over longer term	Medium	High policy risk due to poor stakeholder acceptance
Installation bans	"	"	Medium	"

Table 5: Summary of relative merits of in-service measures
(https://ris.pmc.gov.au/sites/default/files/posts/2016/03/Reducing-emissions-from-wood-heaters-RIS.docx)

Choice of heater is also dependant on a range of issues, and will vary from one household to another. As well as cost of fuel (as noted above), preferences will also relate to

- availability of fuel – eg Armidale no longer has reticulated natural gas; wood resources are deteriorating
- efficiency of fuel (and obviously appliance) – ie more expensive fuel may provide better heat
- capital cost for the appliance – ie up-front cost of new heater, and any additional infrastructure costs cost if appropriate such as flues or piping
- convenience – chopping, storing and carting wood vs flicking a switch
- immediacy – instant heat vs needing to wait
- longevity – staying warm or generating heat even after fuel is stopped; pre-set timing options
- aesthetics – perceived comfort, ambience and overall appearance

Replacement options

1. **Upgrade** to wood heaters with reduced emissions capacity

- Pros:
  Those wishing to still have a wood heater can have one
  Easy to retrofit replacement of existing heater (ie no new additional infrastructure required)
  Hot appliance will continue to leech some heat as it cools down after use
  Perceived comfort and 'ambience' factor
- Cons:
  Even a good heater can produce emissions if run poorly (damped down, wet/green wood etc)
  Requires storage area for dry wood, and prior commitment (ie purchasing prior to need)
  Increasing cost of wood
  Reducing supply of sustainable timber
  Laziness can result in use of poor quality / wet / green wood which then increases emissions
  Can be drying to internal air
  Time lag to fire up

2. **Replace with electric heater**

2.1 **Reverse-cycle air conditioners (heat pumps)**

Modern heat pumps have become one of the most cost-effective methods of heating in Australia. Efficient heat pumps can provide 5-6 times as much heat as they use in electric energy. Given they also work well at low temperatures, even when drawing on external air up to -10C, makes them effective as a form of heating in Armidale.

- Pros:
  Instant heat; thermostat and timer control
  Ability to run during the day for preheating using free in-house solar energy (if available)
  Highly efficient COP if used correctly
  Ability to also cool for summer
- Cons:
  Can by drying and noisy
  Can be expensive to use if direct from grid
  Only heats (or cools) whilst on
  Potential to create 'laziness' for cooling in summer rather than addressing cooling issues

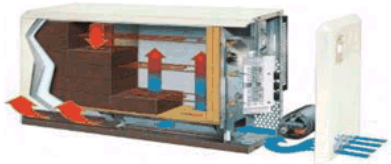
2.2 **Convection heaters**:

- Pros:
  Relatively instant; thermostat and timer control
  Ability to run during the day for preheating using free in-house solar energy (if available)
  Heat large area well over extended period of time
- Cons:
  Can be expensive to use if direct from grid
  Less efficient COP than Reverse-cycle
  Only heats whilst on
  Not good with high ceilings as heat pushed upwards

2.3 **Radiant Heaters**

- Pros:
  Good for small areas and/or short periods
  No moving air or potential drafts
  Heat retained at source (ie not pushed towards ceiling)
  Ability to run during the day for preheating using free in-house solar energy (if available)
- Cons:
  Can be expensive to use if direct from grid
  Can take longer to warm a large area due to lack of moving air
  Can be hot to touch

2.4 **Heatbank:**



Effectively a convection heater but with large thermal mass acting as heat storage

- Pros:
  Ability to be powered during the day using free in-house solar energy (if available)
  Alternatively can run overnight using off-peak electricity
  Can still be used as 'normal heater' from grid, including at night
  Continues to leech heat into room 24/7 without energy input
  Price competitive appliance
- Cons:
  Lag time initially to warm up (once only)
  Limited by size –ie larger houses may need several

3. **Replace with Gas heater**

- Pros:
  Instant heat; thermostat and timer control
  Comparatively cost-effective with direct electrical heating (though this may change)
  Suitable for full ducted system (whole house)
  Efficient for quick heating
- Cons:
  Expense of gas (only bottled LPG available in Armidale)
  Limited availability of fossil fuel
  Can be expensive to buy and install
  Infrastructure costs - should to be externally flued
  Other potential health issues, including indoor-air environment

4. **Other options**:

4.1 **Pellet stove heaters**:

Fireplaces that burn pellet fuel, a renewable sawdust-like timber residue. Claims of exhaust emissions <1.0 gram /hour.

- Pros:
  Highly efficient (70-83%), near zero emissions
  Instant heat
  Fuel from waste products (sawdust, wood chips, kernels etc)
  Thermostat control
  Cool touch to appliance
- Cons:
  Pellets not readily available in Armidale, though can be purchased
  Require electricity (fans, controls, pellet feeder)
  Comparative costs dependant on how many installed
  Bulk storage required for pellets

4.2 **Ethanol Spirit burners**

Spirit burners – bio-ethanol fuels - (such as Ecosmart Fireplaces) potentially portable, not requiring any permanent fitting or gas connection.
No flue required.

- Pros:
  Biodegradable combustion producing heat, CO_2 and steam
  No mess (ash etc)
  Highly efficient (90%), near zero emissions
  No infrastructure required (chimney or flue)
  Instant heat
- Cons:
  Potentially not hot enough as primary heat source (for Armidale winters)
  Operational issues (requires 'cool down' before refuelling)
  Possible condensation issues
  Ventilation required to offset oxygen consumption
  High cost of fuel; high cost of appliance
  Storage required for ethanol

There are other heating options such as in-slab heating, hydronic (under-floor or wall) heating, solar-pre-heated systems, oil and other sources but they have not been discussed here. Rather the selection above are deemed the most likely to be equivalent replacements for existing, or in lieu of new, wood heaters.

Recommendations

- That consideration of the various fuels and appliances need to take into account costs, availability and convenience
- That use of daytime solar electricity be encouraged to pre-heat houses with electrical appliances
- That the public be made aware that moisture meters are freely available to residents to ensure dry wood is being used
- That a wood-storage competition be held to encourage people to store their wood correctly

4.4 Housing stock

While addressing the issues of heating, however, the housing infrastructure itself needs to be investigated –ie, is this just a waste of money anyhow if the house can't retain that heat. That is, if the house could be better insulated, better operated (behaviour) etc, it would reduce the need for heating and therefore a different system (or even the same system) would be more efficient and ultimately result in less usage (and therefore less emissions if still a wood heater).

Addressing the type of heater (and heating) alone, may to some degree, defeat the purpose. While it is possible to build new houses that require negligible heating, even in Armidale, it is the existing houses that need to be addressed. Many of these houses are either single skin weatherboard, or solid double brick. Most have no insulation in walls, limited insulation in floors, and only some with insulation in ceilings. Where living areas are not facing north, they do not benefit from the warmth of winter sunshine. If it were possible to upgrade these houses at minimal costs – such as ceiling and floor insulation, retrofitted double glazing, and of course quality curtains and blinds, this would assist in reducing the heating demand. In so doing, alternatives to wood heaters – which despite their emissions issues are themselves effective in heating houses – become more viable, and potentially 'acceptable'. Further, many of these homes may well be rentals – so incentives for landlords to take action is required.

Also as noted above, many houses already have PVs on their roofs and so have the benefit of free daytime electricity that could be used towards providing heating operations during the day – effectively pre-heating the house. But for this to be efficient, ways of retaining that heat in the house is essential – such as better insulation, glazing, and operation of curtains and blinds. Fully insulating a home can improve its Energy Performance rating by ~ 2.2 stars[27], and so by default therefore reduces the need for heating (and cooling).

Extent of Insulation	Heating	Cooling	Heating & Cooling
Ceiling only (added R2.5)	15-25%	30-45%	20-30%
Ceiling (added R2.5) and Walls (added R1.0)	40-50%	40-55%	40-50%
Ceiling (added R2.5), walls (added R1.0) and floor (added R1.0)	45-55%	35-50%	45-55%

Table 6: Typical energy savings due to insulation (www.sustainability.vic.gov.au)

Improvement on single glazing	% improvement	Note
Adding heavy curtains, no pelmet	13	Assumed behaviour
Standard Double Glazing	35-45	Varies due to frame types
Heavy curtains with pelmet	37	Assumed behaviour
Double glazed with Low-e coating	43	
Double glazed heavy curtains & pelmet	54	Assumed behaviour

Table 7: Typical reduction in heat loss for different window treatments (AIA-ABSA Holistic Sustainable Design-MHA_HELP 2011);

[27] https://insulation.com.au/support-article/energy-cost-savings

Recommendations

- That any rebate program for new heaters includes requirements and/or funding to upgrade house infrastructure as appropriate (eg minimal insulation levels, in order of priority)
- That SLA's previous curtain- and pelmet-making workshops might be revisited
- That information on improving existing housing stock be made readily available with possible incentives for upgrading
- That a program that addresses rentals and incentives for landlords needs to be developed and implemented

Figure 5: SLA 'I Can Do It' previous workshops (slarmidale.org/2012/07/4682)

4.5 Education & Behaviour

Behavioural issues are two fold – running of the heating appliance, and running of the house overall. Educating the community in appropriate behaviour is necessary for this reason. While wood heaters continue to be used, efficient and correct operation is essential to reducing the appliances' emissions, and previous education programmes have assisted in this, including ensuring only quality, well-seasoned and dry wood is used, and dampers are kept open to reduce smoking.

To enforce behavioural change, people need motivation. However, the values that motivate them may be opposing –comfort vs cost vs health vs adhering to regulation. If motivated to change, then people will more readily accept education on behaviour. Getting the right message across is therefore imperative – ie the right to a healthy, clean-air environment rather than the right (or not) to have a wood heater. As earlier mentioned, a message that focuses on a resilient community with healthy clean air is better than one that one that continues to highlight the negatives of bad behaviour and dirty chimneys – proof in the fact that the latter approach , despite years of trying, has not worked. Focusing on positive outcomes – cleaner air, healthier population, increased tourism, and so on – is more likely to grab people's attention than negativity.

For operation of wood heaters, there are an assortment of education brochures and videos available, including from the Australia Home Heating Association.[28] Links to Council websites are also available for further information. It is understood that the AHHA forwarded the link to ARC in 2018 for inclusion on the council portal, but it is unclear if this has been done.

Issues that need to be reinforced in relation to using wood heaters include –

- Use of well-seasoned, dry, quality wood
- Storage of wood to keep it dry
- Appropriate sized fuelling of the heater (ie size of logs, kindling etc)
- Operational issues of starting up, ongoing fuelling, overnight burning, etc
- Maintaining clean heaters and flues

It has been noted that those who install a SmartBurn, by default, become more conscious of the output of their heaters, and so therefore of what they are doing. As to whether the SmartBurn reduces emissions, there is no consensus on this (refer section 4.3). However, given that they result in cleaner flues, based on feedback from local chimney cleaners in Armidale, , the implication is that wood burning becomes more efficient, so therefore wood use is reduced, and potentially emissions also reduced by default.

With the option to become 'lazy', the ability to be able to flick a switch becomes more appealing than loading up the fire when coming home after dark to a cold house. This leads to the possibility of a duel fuel option – ie preheating during day with air con or a Heatbank, and then only using the wood heater as backup or for 'effect' and willing to let it go out overnight.

However, education must also address general behaviour such as opening and closing windows, doors, curtains and blinds appropriately, dressing appropriately and so on. Efficient operation of the house itself and behaviour by the occupants, can also significantly improve the benefits of any heating input.

Demonstration programs, workshops and how-to resources are either available or doable, with opportunities for Council to approach State (or Commonwealth) government for grants and/or assistance for educational programs, setting-up demonstration projects and providing resources to assist action.

[28] www.homeheat.com.au/how-to-videos

Recommendations

- That council provides links to 'how-to' videos on the Council website
- That a series of educational workshops be run to cover both heater operation and household behaviour
- That SLA's previous 'I Can Do It' program might be revisited
- That language used to address the issue be focused on positive outcomes rather than negative impacts
- That Council investigate opportunities to set up demonstration projects (eg either individual homes or whole-of-community) for improving air quality

Figure 6: https://aurorasuspendedfires.com/huge-list-proven-tips-firewood-fire-starting-operating-procedure-ash-handling/

4.6 Monitoring

There are currently several monitoring processes being carried in in Armidale. There has been ongoing monitoring since 1995, with the monitor upgraded in 1999, then eventually replaced with the DustTrak monitor in 2008. This sits atop the Council Administration Building (CAB), with a reasonable volume of data now collected, but ceased operation in 2018 once the Purple Air monitors were installed. The more recently added Purple Air Monitors are located around the city and provide real-time data on particulate emissions. And of course, everyone can see the smoke, especially on a cool, still morning when the inversion layer is at its worst. There has also been use of a Smoke Ranger in the past – someone canvassing the streets early in the morning and late at night to observe gross-emitting chimneys.

Highlighting the data (refer section 4.2) will raise awareness and make residents more conscientious of their own personal emissions where applicable. Whereas foot patrols that observe gross-emitting chimneys allows for immediate action – ie knock on the door and take action straight away (refer section 4.7). Use of drone imaging could also provide real-time location of the worse-case emitters.

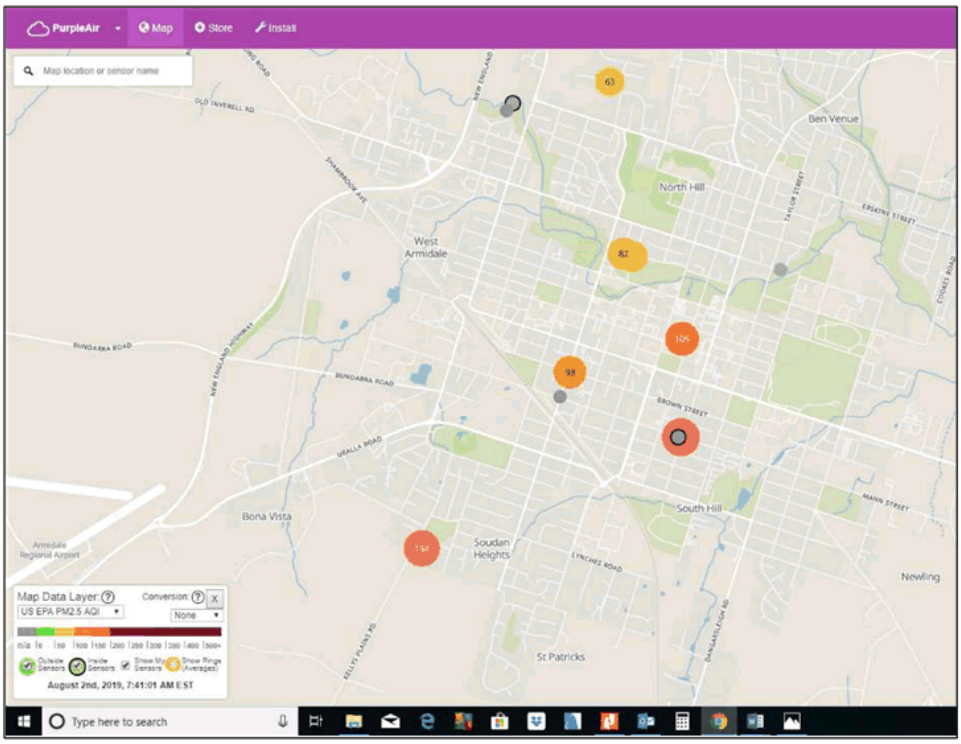


Figure 7: Screenshot of Purple Air Monitors in Armidale (www.purpleair.com/map?#13.79/-30.52054/151.66626)

The major benefit of monitoring is the evidence it provides, especially real-time data, and can be useful incentive for people to take action. But also, given Armidale's specific situation, it would be the ideal 'case study' for the NSW Government research in addressing the overall state-driven legislation for air quality. It is understood that ARC has previously suggested this via written application to the NSW EPA[29] but nothing forthcoming has resulted.

The other side of monitoring is visual patrols, and while it does not provide admissible data it does give the opportunity for direct interaction with those creating the emission levels. Council's Environmental

[29] 'Clean Air for NSW' 2016 Consultation Paper – Submission, Armidale Regional Council, ref AINT/2017/00702

Health Officer or similar staff member doing patrols (akin to the previous Smoke Ranger role) would be able to contact gross-emitters immediately the problem is detected and, hopefully, result in immediate mitigation measures as well. Follow-on visits to ensure good practice and/or reiterate the need for better practice (and ultimately imposition of fines if appropriate) is the next step. Such officers might also detect heaters that do not have Council approval, though this may be difficult given that many heaters were installed prior to the DA requirement was brought into practice.

Training of these officers would be required to ensure they are appropriately skilled in both technical issues and communication skills. Assisting homeowners is more productive than punishing them, and being able to explain the reasons behind decisions, and ways to improve their heating environment, may appease over-reactions from homeowners. While specifically developed to address issues relating to bushfire, the skills applied by California's ARA (Air Resource Advisors)[30] might provide some guidance in this area.

Recommendations

- That data continue to be collected via the OEH Air Quality Monitor in Kirkwood Street, tied into the OEHAQ website, and the Purple Air monitors to provide hard evidence of the situation
- That such data be publically available and visible
- That OEH officers or Smoke Rangers be re-engaged to conduct smoke patrols and household interactions
- That these officers be suitably trained in both technical and communication skills

Figure 8: DustTrak monitor atop Council's Administration Building (photo N Smith, ARC)

[30] sites.google.com/firenet.gov/wfaqrp-external/air-resource-advisors?authuser=0

4.7 Legislation

Whilst legislation is unlikely to affect current housing stock and currently installed heaters, it does at least address newer heaters being installed and possible future options. The latest EPA regulations which limit emissions output from wood heaters to 1.5g/kg will assist with newly installed heaters, but does not address those currently installed.

Whilst this report has been prepared specifically for ARC, local government in NSW generally has limited level of authority on some of these issues. In New Zealand, the National Environmental Standards for Air Quality [31] legislated by the government, enables local councils to enforce strategies that address wood smoke pollution as a health issue. This is on the basis that emissions reduction correlates to improved health. The relevant national standards in Australia, ie relating to PM2.5 levels and to wood heater emission standards (refer below) are not necessarily clear enough to outline the necessary actions needed to comply (especially the former), and are partially outdated. In the meantime, however, there are some councils that are willing to make strong 'recommendations', and the previous Armidale Dumaresq Council's policy regarding home heating was considered, at the time, to be leading edge. However, DCPs are not enforceable, and efforts to date have not, overall, worked to reduce the issues.

Local Councils have the ability to assess the appropriateness of wood heating in their local government areas, and through their LEPs and DCPs, can influence the type of heating installed in new homes. To this end, ARC currently requires a Section 68 Application for wood heater installation. Currently, under the NSW Local Government Act 1993, Council approval is required to install a solid fuel heating appliance. Wood heaters must have compliance plates that meet the current Australian standard – AS/NZS 4013:2014. ARC specifically had POL134-Sustainable Domestic Energy Use & Local Air Quality (incorporating Local Approvals Policy for Solid Fuel Heaters) which was adopted by Armidale Dumaresq Council in June, 2010. This addresses issues of installation, education, enforcement and monitoring.[32] And while Council can monitor and penalise those who operate heaters poorly, imposing penalties for such behaviour is limited by lack of resources (ie staff time and costs). However, this policy is not operational at the moment. Separation of the installation from behavioural aspects of the policy – ie split Air Quality and LEP requirements, may assist in better control and implementation.

POL134-Regulatory - Policy for Sustainable Domestic Energy Use and Local Air Quality (incorporating Local Approvals Policy for Solid Fuel Heaters)

Policy Objectives

- To promote and increase the responsible and efficient use of resources to meet energy needs in homes in Armidale Dumaresq.
- To improve community health and life expectancy by reducing exposure to toxic fine particle, air Particulate Matter 2.5 micron, ($PM_{2.5}$) pollution in the Armidale urban area, to meet relevant national air quality advisory standards by 2020.
- To apply local regulation having regard to relevant standards and legislation.
- To implement this Policy in a manner which is fair to our community, balancing consideration of local climate, environmental sustainability, and community health.
- To support Council's vision for "Excellent Lifestyle – Sustainable Growth".

[31] www.mfe.govt.nz/air/air-regulations/national-environmental-standards-air-quality

[32] www.armidaleregional.nsw.gov.au/ArticleDocuments/499/INT%20Policy%20for%20Sustainable%20Domestic%20Energy%20Use%20and%20Local%20Air%20Quality%20incorporating%20Policy%20for%20Solid%20Fuel%20Heaters%202013%20REVIEWED%20VERSION.pdf.aspx

At the time it was written, initially in 2010 and updated in 2013, this policy was considered 'leading edge'. However, with subsequent state and national legislation and other Councils taking stricter action, and the fact that this policy has now lapsed, the question arises - is this enough, and how will Council assert these actions to make this happen? Given the wealth of technology and the ability to now build better houses, including the conditions being applied by BASIX and the NCC (which are soon to become stricter in terms of energy efficiency), it is possible to avoid the physical need for wood heating in new homes.

The heaters themselves are subject to standards relating to their purchase and their installation. Under the Clean Air Regulation, all new solid fuel heaters sold in NSW (both local and imported) must have a compliance plate meeting the Australian Standard - AS/NZ 4013:2014. The current emission limit for all new wood heaters sold in Australia is 2.5 grams of particulate emissions per kilo of wood burnt.[33] However, from 1st September, 2019, standard for emissions has been reduced to 1.5g/kg tested for hardwood) and introducing a 60% efficiency. However, there is also evidence that real-life behaviour is equivalent to a factor of x2 in regards to laboratory/industry testing, ie 1.5 really equates to about 3, based on real behaviour and operations[34]. Ideally, a stricter requirement at say 1, or even less, is therefore likely to achieve better results in the 'real world'.

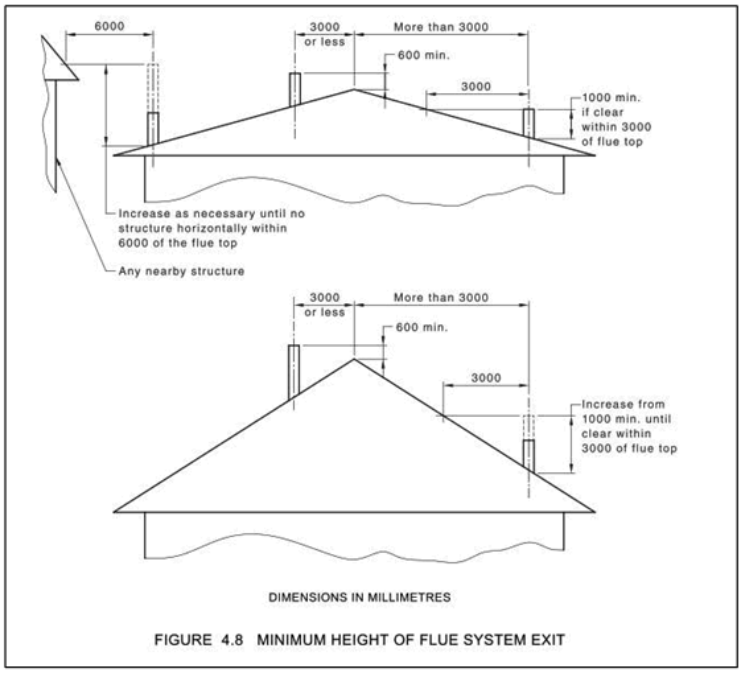


Figure 9: Sample installation from AS/NZS 2918:2018

Heater installation itself is regulated by Australian Standard AS/NZS 2918:2018. However, there has also been a proposal put forward to regulate the installer themselves, with an online AHHA Certified Installers Certification' course.[35] Currently while training courses are available, there is no assurance that the heaters are being installed by accredited and correctly trained installer, which potentially may create problems – such as too-short flues which create more smoke.

But again, while the new EPA rules and the other building regulations are tighter, they only address new heaters going in and not those that are existing - it would appear not possible to legislate use of current

[33] www.environment.gov.au/resource/wood-heater-particle-emissions-and-operating-efficiency-standards
[34] Dr Emily Wilton, Woodheater Management in NZ, including Nelson Case Study, CASANZ 2019
[35] www.pointsbuild.com.au/ahha-installers-program

appliances. That said, current NSW legislation does allow for fines post-monitoring of poorly-performing heaters which would hopefully encourage better usage.

Nor can we legislate against poor behaviour and operation of even the best quality heater. However, can ARC regulate the operation of wood heaters through a 3 strike policy? Is it possible to have a dedicated ranger to patrol in winter evenings, and possibly enforce the excess smoke notices and fines? The previously mentioned survey could include a question as to community support for this process.

Recommendations

- That Council commits to its policy of advice, warning and fines for those with repeatedly smoking chimneys
- That Council impose a '3 strike policy' – ie if continually failing to improve heater behaviour, more drastic action be taken - dedicated Ranger patrol in winter warns and advises residence on effective operation, 2nd time a warning and notification, 3rd time substantial fine if cannot show cause and so on
- That local retailers are held to account to only sell fully compliant heaters to most recent EPA regulatory requirements
- The any new development (ie brand new homes) are not permitted to install wood heaters on the basis that it is now possible to create houses that do not require that degree of heating, commencing in say 2022, with prior promotion and education; However, it is unclear at this stage what legislation would be required or possible to enforce this, and Council needs to lobby NSW government for such legislation
- The Council, where possible, provides advocacy, consultation and collaboration with higher levels of government (ie NSW and Commonwealth governments) to create a national standard that addresses the issues, thus allowing Council themselves to act with clarity and without reprisal.

5. Recommendations

5.1 Packages

The best solution to address the localised issue of Armidale's wood smoke problems would appear to be threefold, a combination of

- heater upgrade/replacement,
- house infrastructure upgrade, and
- education

However, in order of ability to proceed and create initial effectiveness,

1. education
2. incentives for replacement/upgrades
3. enforcement

Education & Behaviour

First and foremost, the community needs to be made well aware that there is an issue – and an updated survey will determine both the current level of awareness and concern, and in so doing reignite the issue for those who may be unaware or uninformed. As noted earlier, education programs that address both heater and household operation are a key to reducing emissions, the former by reducing smoke directly, the second by reducing overall heating needs. There are a myriad of videos and links available that Council could, and should, make available for viewing on the Council website. However, face-to-face workshops may be more effective in changing behaviour. Recommendations are that –

- Council revisit a community-wide survey to determine the level of awareness and concern of the issue
- Council facilitate (possibly directly or through other organisations such as SLA or Homes North) a series of free public forums and workshops conducted in early Autumn each year (or at least in the next few years)
- These could include a series of educational workshops be run to cover both heater operation and household behaviour
- Council provides links to 'how-to' videos on the Council website
- Incentives for good behaviour be considered – such as a Firewood Store competition
- That a series of educational workshops be run to cover household behaviour
- That SLA's previous curtain- and pelmet-making, and heating workshops might be revisited
- That information on improving existing housing stock be made readily available with possible incentives for upgrading

Replacement

As noted above, simple replacement of heating appliances without additional structural and behavioural changes may negate the benefits. A rebated program that is a combination of improvements to the home along with a new appliance would eventually address the wood smoke issue that is being generated by existing housing stock.
This ideally would include the following, with options to mix and match as appropriate to the existing house's infrastructure–

- Replacement of existing wood heater with new appliance (optional fuel source, with criteria)
- Installation of ceiling insulation (min. R3.5)
- If ceiling insulation already in place, then installation of under-floor insulation (min. R2)
- If ceiling and floor insulation already in place (or floor not viable, ie concrete slab), wall insulation retrofit where possible

- If all possible (viable) insulations already in place, double glazing key windows (retrofitted vs new)
- If all above infrastructure already in place, curtains/blinds/pelmets – access to 'I Can Do It' resources to assist
- Additional to any of the above, education package (how to 'use' your house and heater etc)

Figure 10: Previous Council loans for insulation

It is essential that any program that provides for new heaters must also improve the house infrastructure as well, as previously noted. To the best of our knowledge, none of the replacement schemes implemented elsewhere in Australia required compulsory housing improvement as a condition of the rebate for the new heater. Combing the two ensures a more cost-effective and efficient outcome as heating needs are also reduced in the process.

The Rest

As per the body of this document, there are a range of other recommendation that address raising community awareness, monitoring, legislation, enforcement and advocacy. Any detailed program that Council develops will need to include these issues and the various recommendations as well as the core issues of education and replacement to maximise overall effectiveness and achieve long-term goals of ultimately improving air quality.

As previously noted, all of the above are broad based recommendations only – Council will need to engage a consultant(s) and/or relevant staff members to fully develop these recommendations into a tangible, viable and equitable program of achievable strategies and outcomes.

5.2 Funding

Funding is required in several areas –

- To fully develop a detailed strategy based on the recommendations contained herein
- To carry out a new community survey
- To cover the cost of rebates for new heaters and/or building infrastructure
- To cover the costs of employing Smoke Rangers

Rebates to cover the packages may be in the form of one-off or staged payments, interest free loans, or other offsets such as reduced rates or fuel costs. Council in its previous iterations, namely Armidale City Council and Armidale Dumaresq Council, along with the then New England Electricity Council (later NorthPower) have previously provided various interest-free loans (up to $3,000 in 1990's) for wood heater replacement, insulation and solar hot water (refer section 3.2). Investigation of how these were funded and functioned is recommended.

Note that WSAG has not proposed an actual amount for the possible rebate, pending further research into the best options. However, it would need to be an amount that provides enough incentive, though not necessarily the whole cost, with a minimum sum dedicated towards purchase of a new heater, and the balance going towards home improvements. Determination of an appropriate amount will depend on funding options as much as material costs.

Further access to funding may require additional partnerships with providers, such as energy companies, state government, NGOs or retailers. In the case of Launceston, a partnerships was set up with TasGas to assist in replacement of wood heaters with gas heaters, with both state government funding available through TasGas. However, this was limited to simply replacing wood heaters with gas heaters, and has had some long term limitations as the price of gas has significantly increased, and appliances are being reverted back to wood.

SLA's 'I Can Do It' program was partially funded by the NSW Government Environmental Education Trust, and revisiting the trust program may provide funding to run further educational programs and/or piggy back onto content already developed by SLA.

Application to the State Government for a program similar to that carried out in the Hunter may provide funding for research and monitoring, and possibly case demonstration projects. But ultimately, a dual program of education and replacement will have the greatest impact.

Given the relationship between wood smoke emissions and health issues, as heaters are installed with Council approval, they could also entail an annual license fee which could contribute to the cost of implementation of Council's various smoke-abatement strategies, though it is unclear what legislation this might come under, if any.

Other funding might provide

- incentives for landlords – ie in lieu of rebates for heaters, rebates on rates on proof of installation (effectively costing Council same costs)
- costs to cover Environmental Health Officers or Council rangers to carry out 'smoke patrols' and carry out inspections, fines etc
- funding for publications and educational materials
- one-off funds to construct signage such as Pollution-level screen in the mall

Other partnerships to be considered might include Australian Home Heating Association, Starfish, NSW Hunter New England Area Health Service, Homes North, General Practitioners & Allied Health Professionals, UNE and even local schools.

5.3 Short, medium & long term directions

Short term

- survey to reconfirm community attitude – and raise the issue again with those not taking notice
- regardless of proposed directions, a strong education program to holistically address the issues of warmth which include not only heater operation, but household behaviour as well
- community consultation and feedback on proposals
- development of detailed delivery of strategies and directions
- implement final decisions and apply for funding as appropriate
- set up for future actions

Medium term

- implement packages with funding
- ongoing education program for long-term planning
- ongoing monitoring

Long term

As more houses are slowly upgraded and/or ultimately replaced, they will, ideally, perform better thermally. BASIX currently has some impact on this but until it is tightened up, along with NCC (National Construction Code) requirements, most new houses still do not maximise these design and construction opportunities, even though they are readily available. It is totally feasible – and has been done – to successfully build new houses in Armidale that do not require major heating infrastructure. And this does not need to cost more than the 'average' house cost if it is designed correctly.

Ultimately, it may be the decision of an assertive Council to enforce suitable heating systems in Armidale's homes. This might start with new construction only, then possibly evolve to include renovations, then removal of existing heaters. If building regulations result in better-performing houses, this will more easily be achievable as major heating infrastructure is no longer needed. Education and transition periods will be needed, but the ultimate outcome of a cleaner and healthier Armidale has to remain the long-term objective.

6. Appendix

6.1 Recommendations by Section

4.1 Boundaries & Limitations

- That if possible, a database of existing heaters, their make, model and age, be established within the boundary area as a way of benchmarking current and future use
- That Council better promote the requirement for Section 68 approval for heater installation, working with the retailers at point of sale (though this will not pick up non-local purchases)
- That, if possible, ensure only fully-compliant wood heaters are available for sale in Armidale in accordance with OEH requirements
- That any rebate replacement/upgrade program also address rentals with possible incentives for landlords

4.2 Community Awareness & Feedback

- That a new survey be conducted to determine the community's level of awareness, perception and understanding of the wood smoke issue; in so doing, the survey itself will reignite the discussion
- That a visual display of daily PM2.5 levels be shown in the Mall and/or on the Armidale Ex-services' external screen
- That once the report and proposed Council strategies are nearing finalisation, that a public forum be held to inform the community and allow for constructive feedback for inclusion

4.3 Heating Options

- That consideration of the various fuels and appliances need to take into account costs, availability and convenience
- That use of daytime solar electricity be encouraged to pre-heat houses with electrical appliances
- That the public be made aware that moisture meters are freely available in the Library to residents to ensure dry wood is being used
- That a wood-storage competition be held to encourage people to store their wood correctly

4.4 Housing Stock

- That any rebate program for new heaters includes requirements and/or funding to upgrade house infrastructure as appropriate (eg minimal insulation levels, in order of priority)
- That SLA's previous curtain- and pelmet-making workshops might be revisited
- That information on improving existing housing stock be made readily available with possible incentives for upgrading
- That a program that addresses rentals and incentives for landlords need to be developed and implemented

4.5 Education & Behaviour

- That council provides links to 'how-to' videos on the Council website
- That a series of educational workshops be run to cover both heater operation and household behaviour, whether run by Council or external groups such as SLA
- That SLA's previous 'I Can Do It' program might be revisited
- That language used to address the issue be focused on positive outcomes rather than negative impacts, though the message that wood smoke is not good for health still needs to be included
- That Council investigate opportunities to set up demonstration projects (eg either individual homes or whole-of-community) for improving air quality

4.6 Monitoring

- That data continue to be collected via the OEH Monitor and Purple Air monitors to provide hard evidence of the situation
- That such data be publically available and visible
- That OEH officers or Smoke Rangers be re-engaged to conduct smoke patrols and household interactions
- That these officers be suitably trained in both technical and communication skills

4.7 Legislation

- That Council commits to its policy of advice, warning and fines for those with repeatedly smoking chimneys
- That Council impose a '3 strike policy' – ie if continually failing to improve heater behaviour, more drastic action be taken - dedicated Ranger patrol in winter warns and advises residence on effective operation, 2nd time a warning and notification, 3rd time substantial fine if cannot show cause and so on
- That local retailers are held to account to only sell fully compliant heaters to most recent EPA regulatory requirements
- The any new development (ie brand new homes) are not permitted to install wood heaters on the basis that it is now possible to create houses that do not require that degree of heating, commencing in say 2022, with prior promotion and education - appropriate legislative options will need to be investigated and lobbied for
- The Council, where possible, provides advocacy, consultation and collaboration with higher levels of government (ie NSW and Commonwealth governments) to tighten up national standards that address these issues, thus allowing Council themselves to act with clarity and without reprisal.

6.2 Terms of Reference for WSAG

Mayor's External Wood Smoke Advisory Group - Terms of Reference

Purpose

The Mayor's External Wood Smoke Advisory Group has been formed by the Mayor, Armidale Regional Council, to provide a representative body to contribute to the management of wood smoke and to recommend actions to improve air quality as affected by wood smoke in the Armidale city area.

Objectives

By sharing their expertise, experience and community knowledge, group members will work together to develop recommendations on wood smoke management in Armidale.

The group will analyse and review studies into health issues, behavioural response to managing wood smoke problems, appropriate educational messages, policy and any other relevant issues, and consider suggestions for improvement and mitigation of wood smoke issues.

A written report will be provided to the Mayor by the end of May 2019. It is understood that the recommended actions may vary across time-scales (ie. short, medium and long-term).

Membership

The Group consists of the following membership:

- Community (4 representatives)
- University of New England (4 representatives)
- Wood heating industry (1 representative)

Term of membership

The group will operate for a period of 6 months from its commencement. It shall be reviewed by the Mayor in June 2019.

Meetings

The group will meet as needed, decided by the members.

Roles

The group chairperson will advise meeting dates / venues via agenda circulation (e-mail).

The agenda for the meeting shall be prepared by the group chairperson. Members can forward agenda items to the chairperson not later than 2 working days before the meeting for consideration.

Minutes of each meeting shall be prepared by the chairperson or a member of the group as agreed. The chairperson will maintain a file of confirmed minutes for reference by group members.

The report will be prepared by the group.

A council officer will support the group by providing, as requested, background information that Council may hold, and liaising with the Mayor as needed.

Reporting

The group will report to the Mayor.

Media Liaison

The chairperson is the primary spokesperson for the Mayor's External Wood Smoke Advisory Group and will communicate with the Mayor before liaising with the media.

Final WSAG-TOR/22jan19/R01

6.3 Council proposed amendments to WSAG

Response by WSAG to tabled Amendments from Council Meeting held December 2018

This response was prepared at 22nd January meeting and forwarded to the Mayor within the minutes of that meeting.

Our agreed responses to the Tabled amendments are as follows:

a) *The external advisory group complete its work and provide its advice in the form of a written report to Council in due course.*
Our response: We will be submitting a report in June 2019.

b) *That councillors may provide submissions in writing to the advisory group, at which the advisory group can invite Councillors to further discuss submissions as deemed relevant by the advisory group*
Our response: Any Councillor or member of the public can make a submission. We are not required to invite them to meet with the Advisory Group.

c) *The external advisory group meet with any Armidale Regional Councillor and the CEO if they wish to make submission to it or discuss any relevant issues with it.*
Our response: As above.

d) *The external advisory group meet with Council's Environmental Sustainable Committee in February 2019 to discuss its brief (issues related to woodsmoke and its impact on air quality in Armidale including related health issues) with that committee of Council.*

Our response: Mahalath and Navjot are both members of this Committee, but Mahalath will be away and will not be attending the next meeting. Navjot will be attending. There will be no report submitted by our Advisory Group. There is nothing to report as yet

6.4 Background Report

Wood smoke from solid fuel heaters causes a serious air quality issue in Armidale. Over several years, Dustrak monitors and more recently, the EPA air quality monitoring device show that National Air Quality Standards are exceeded many times every winter. There is increasing scientific evidence that chemicals and particles in wood smoke are bad for human health and contribute to climate change.

Wood heaters are a popular heating option in Armidale, however, the town's climate and geography exacerbates pollution issues. The majority of wood smoke pollution in Armidale is caused by overnight burning and the "shutting down" or stifling of wood heater during the 10pm to 6am period by operators to maintain a burning ember/flame. Overnight burning is not recommended by the NSW EPA or the Home Heating Association, as it causes high levels of pollution. However, most people are actively making the decision to burn overnight and stifle the operation of their chimney; this is a choice based on convenience and economics.

Every year Council conducts a wood smoke surveillance education and some enforcement programing accordance with the provisions and powers available to Authorised Officers under the Protection of the Environment Operations Act 1997. In this regard premises observed with excessively smoky chimneys/flues are visited and discussions are held with the occupiers of the property in relation to the operation of their fireplace, the type of wood used and its moisture levels. We routinely test the moisture content of residents' firewood and advise them of best practise techniques to ensure efficient combustion and minimal smoke. There is not a single solution for reducing wood smoke emissions; it is often a combination of quality wood, minimal moisture levels, correct heater operation and ongoing yearly maintenance that results in well-operating solid fuel heaters.

Over many years, Council staff have also undertaken a range of community education activities. Face to face consultation has been conducted at Market stalls demonstrating the best wood to burn and how to operate wood heaters effectively. Information on wood fire operation to minimise pollution and health risks is available on Council's website and is dispersed through media channels over winter. Education kits have been available using the EPA material. According to research by UNE staff (Professor Don Hine and Dr Navjot Bhullar) residents prefer education and incentives to regulation, however, to date, education concerning the health risks associated with wood smoke has not been effective in motivating a change in heater operation practices by *high* wood smoke emitters. In 2018, Council, with input and feedback from the community, is developing an Air Quality GreenPrint, one of nine GreenPrints to guide the direction of sustainability actions. Much of the focus of the Air Quality GreenPrint is to improve air quality in Armidale through appropriate intervention and education; advocacy for incentives, research and planning improvements; and use of data from the air quality monitors, experience from other towns with air pollution issues and research to inform education.

In addition to Council's wood smoke Surveillance and enforcement program, and community education, Council ensures that the performance requirements of solid fuel heaters installed legally meets the relevant Australian Standards, and that the location of any such heaters minimises smoke nuisance on a local level. The emission criteria of solid fuel heaters is set to become more efficient across NSW within 2019. From 1 November 2016 all wood heaters sold in NSW were required to meet a 55 per cent fuel efficiency standard and produce no more than 2.5 grams of particle pollution per kilogram of wood burnt. Then from 1 September 2019, all wood heaters sold in NSW will be required to meet a 60 per cent efficiency standard and a particle emission limit of no more than 1.5 grams per kilogram of wood; or 0.8 grams per kilogram for heaters with catalytic combustors.

The new standards set more stringent emission limits and efficiency limits on wood heaters and may subsequently assist in reducing wood smoke pollution within the Local Government Area as wood heaters are routinely replaced over time.

Provided to WSAG members from Executive Office, ARC, December 2018

6.5 References

Additional to references cited throughout the document, the following were referred to in preparation for this report:

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MINUTES

AUDIT AND RISK COMMITTEE

Held on

Tuesday, 19 November 2019
6pm

PRESENT: Carolyn Cooper (Chairperson), Michael O'Connor, Kate Woodland-Smith, Cr Diane Gray.

IN ATTENDANCE: Kelly Stidworthy, Nathalie Heaton, Brad Munns, Julie Pearson, Carlos Chica, Sam Spadavecchia, Chris Harper, Susan Law, Kim Bryan, Mark Piorkowksi, Scot MacDonald, Geoff Allen, Jacob Sauer

1. APOLOGIES

Sebastian Hempel.
Margaret O'Connor.

2. CONFIRMATION OF PREVIOUS MINUTES -

CONFIRMATION OF THE MINUTES OF THE AUDIT AND RISK COMMITTEE MEETING HELD ON 18 SEPTEMBER 2019

MOVED K WOODLAND-SMITH SECONDED CR GRAY

That the minutes be taken as read and be accepted as a true record of the Meeting.

CARRIED.

3. DECLARATIONS OF INTEREST
MOC on other Audit and Risk Committees

4. APPROVAL FOR MANAGEMENT TO BE PRESENT
Approval was granted.

It was agreed that Item 5.3 be brought forward.

Mr Chris Harper, Mr Geoff Allen and Mr Jacob Sauer left the meeting 6.18pm

5. ADMINISTRATION REPORTS

5.3 Presentation of Audited Financial Statements and Audit Reports for year ended 30 June 2019 *Ref: AINT/2019/25471 (ARC16/0522-2)*

MOVED CR GRAY SECONDED M O'CONNOR

That the Audit and Risk Committee note:

a) the report on the presentation of the audited Annual Financial Statements for the Year Ended 30 June 2019; and
b) the Engagement Closing Report for the year ended 30 June 2019 from the Audit Office of NSW.

CARRIED.

5.1 Risk Register Report November 2019 *Ref: AINT/2019/26281 /ARC16/0692*

MOVED K WOODLAND-SMITH SECONDED M O'CONNOR

That Mr Sam Spadavecchia's (Blade Assurance) presentation be noted.

CARRIED.

Mrs Susan Law and Mr Mark Piorkowski left the meeting at 7pm.

5.2 Review of Audit and Risk Committee *Ref: AINT/2019/24211 (ARC16/0759)*

MOVED C COOPER SECONDED CR GRAY

(a) That the report on the Audit and Risk Committee following the State Government's Decision Paper be noted.

(b) That Committee's name be changed to *Audit, Risk and Improvement Committee*.

(c) That the Charter be reviewed post adoption of nine core recommendations to accommodate the core requirements.

(d) That the Risk Management Framework be reviewed to ensure it is relevant and aligns with the core requirements.

CARRIED.

5.4 For Information: Accrued Annual Leave Balance Analysis Report as at 30 June 2019 *Ref: AINT/2019/26587 (ARC16/0522-2)*

MOVED M O'CONNOR SECONDED K WOODLAND-SMITH

That the Committee note the Accrued Annual Leave Balance Report analysis, as at 30 June 2019.

CARRIED.
ACTION: Consider including the annual leave report in the Risk Register (as a Cause).

6. GENERAL BUSINESS

6.1 Audit & Risk Committee Charter - Two yearly self-assessment - Draft Briefing Paper and Self-Assessment Form *Ref: AINT/2019/26519 (ARC16/0522-2)*

MOVED C COOPER SECONDED M O'CONNOR

That the Committee perform its two yearly self-assessment as required by the Charter before 31 December 2019.

CARRIED.

6.2 Status of Outstanding Audit Recommendations - November 2019

Ref: AINT/2019/26606 (ARC16/0522-2)

MOVED K WOODLAND-SMITH SECONDED C COOPER

That the Committee note the status of Outstanding Audit Recommendations.

CARRIED.

GENERAL BUSINESS

Mr M O'Connor asked for some further information in relation to Kolora. Mr Munns explained that the land had failed to be pulled across, the sum being $180,000.

Ms K Woodland-Smith asked for information in relation to the shared arrangements for the Internal Auditor. Ms Stidworthy advised that an MOU had been drafted and that Mr Chica had met key staff at Uralla Shire Council. Mr Chica has arranged to meet with key stakeholders at Glen Innes Severn Shire Council.

There being no further business the Chairperson declared the meeting closed at 7.59 pm.