

# Ballina Shire Council Climate Action Strategy 2012-2020



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## **acknowledgement**

Ballina Shire Council would like to thank the many community members of Ballina Shire who participated in the Climate Ballina Conversation Café and Climate Ballina Citizens' Forum held through July and August 2010. These events provided Council with a clearer understanding of the expectations, aspirations and values of our community around climate change action. The community ideas generated through these discussions have informed the development of this document.

Council would also like to acknowledge the funding assistance of the NSW Office of Environment and Heritage for supporting the preparation of this strategy through its Coastal and Estuary Grants Program.

## **purpose of this strategy**

This strategy is designed to document Council's approach to climate change considerations at a local level. As such, it is focused on Council's activities. Council is seeking to play its part in the address and management of climate change considerations, but recognises that other levels of government, business, organisations and individuals each have significant roles in relation to responding to climate change issues.

## message from the Mayor



Council has been actively involved in the consideration of climate change and what it means for Ballina Shire since embarking on the Cities for Climate Protection Program in 2004. Since then, Council has engaged in both internal and community based initiatives focused on energy and resource efficiency, education and knowledge building in relation to climate change. Council has drawn on this experience to compile its first comprehensive Climate Action Strategy.

This Climate Action Strategy is a strategic level document that outlines Council's current thinking in relation to appropriate climate change initiatives. It documents key strategies and opportunities that Council has identified as important considerations in order to respond both efficiently and practically to the challenges posed by a changing climate. Importantly, the Strategy focuses on Council's business and recognises that responsibility for responding to climate change lies with all levels of government and the community.

The preparation of the Climate Action Strategy has been informed by recommendations and ideas put forward by members of the community through the Climate Ballina Conversation Café and Citizens' Forum events held in 2010. This valued input has provided Council with an understanding of the community's expectations in regard to climate change responses.

It is understood that community expectations along with government direction, scientific knowledge and development of mechanisms to respond to climate change concerns can, and are, likely to change over time. As such, this strategy will be subject to ongoing review to ensure it continues to adequately reflect contemporary knowledge and community views.

A handwritten signature in black ink, appearing to read 'Phillip Silver'.

Cr Phillip Silver

## where we live

Ballina Shire is located within the Northern Rivers region of New South Wales. The shire is part of the traditional country of the Bundjalung people. Our main town and commercial centre is Ballina, with villages along the coast and in the hinterland. Ballina's CBD is situated on the banks of the Richmond River.

The coast, the river, the escarpment, and the plateau are four of the prominent features of our shire. These, with their associated waterways, natural habitats and farming, along with the beaches and ocean, help to define our place and contribute to making it special.

## who we are

Our resident shire population of approximately 40,000 is expected to increase to more than 50,000 by 2025.

Many more people, about 32% of the population, will be aged over 65 years.

For the last 10 to 20 years we have experienced the influx of more people and changing economic opportunities. The shire is characterised as being a desired destination for people seeking something different from a city lifestyle.

## our shire

Like other coastal communities around Australia, we are facing challenges in how we balance social, economic and environmental outcomes.

We do not want to damage what we value about ourselves, our communities, our place or the heritage of our shire. We also want to continue to enjoy our natural environment and lifestyles and provide opportunities for work and wealth creation.

Balancing these sometimes conflicting aspirations is a challenge for the whole community.

## what we value

- A built environment contributing to health and wellbeing
  - A diverse and prosperous economy
  - A healthy natural environment
- A diverse and balanced use of our land
- Responsible and efficient use of resources
  - People attaining health and wellbeing
  - Resilient and adaptable communities
    - Transparent and accountable governance

## why plan for climate change?

Climate change can be described as any significant long term changes in weather patterns resulting from the increase in the earth's average temperature. The Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report (2007) provides the most contemporary consolidated overview of agreed scientific findings in relation to climate change. This IPCC report concludes that climate change is occurring and that global warming as a result of increased greenhouse gas emissions in the earth's atmosphere is largely due to human activities. Although there remains debate amongst some in the community, the focus is now on determining how we can best reduce our emissions and adapt to the impacts of climate change.

Ballina Shire's long coastline and extensive floodplain makes it particularly vulnerable to the potential impacts of sea level rise and coastal storm events. Much of the town of Ballina is situated on a low lying island surrounded by the tidal waters of the Richmond River and North Creek. Other areas of the shire are on the extensive Richmond River floodplain, increasing the risks of flooding associated with the predicted impacts of more intense rainfall events. Much of the shire's hinterland may also be impacted by variation in rainfall and weather events.

Council acknowledges that the legal and insurance sectors are now recognising climate change issues and the associated risks. In this regard, it is likely that climate change issues will increasingly inform public policy, legal frameworks and insurance policy in the foreseeable future. This will, in turn, substantially influence Council's operations. As such, it is prudent for Council to consider the implications of climate change issues from a risk management perspective in order to determine a reasonable response.

As a local government body, Council is required to act on relevant legislation presented to it by the State and Federal Governments. There is a variety of legislation that is relevant in considering Council's responsibilities and the associated implications of climate change. Council has an obligation to respond to the legislative framework whilst having regard for its available resources.

It is evident that climate change issues have implications for virtually all areas of Council's core functions, with many of these implications being interlinked and complex. Such implications range across a variety of fields including insurance and finance, infrastructure planning and function, and broad scale land use planning for the shire. As such, there are not only community expectations for local government in relation to these issues, but also a range of important management considerations for councils to address in order to maintain sustainable, efficient and practical responses to the challenges posed by climate change.

Much of the available literature addressing climate change issues indicates that the costs and threats associated with doing nothing outweigh the potential savings associated with waiting for definitive answers to problems. Significantly, action in relation to climate change often involves other substantial benefits to the community such as reduced resource consumption, longer infrastructure life and more sustainable living practice overall.



## what changes are we planning for in our region?

With respect to climate change science, the IPCC and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) provide leading scientific information for consideration at the national level. Scientific knowledge with respect to climate change is rapidly being updated and enhanced. In conjunction with this, predictive science in relation to potential impacts is also constantly changing and improving.

There is now general scientific agreement that we can expect a warming of the earth's atmosphere as a result of increased greenhouse gas emissions. The variation in this temperature is likely to cause changes to sea level, average temperatures, rainfall patterns and weather events.

It should also be noted that the body of scientific, policy and management information associated with climate change is continuing to expand. This will require ongoing monitoring by Council in order to keep abreast of contemporary material and direction. Council is employing the precautionary principle in this regard, consistent with the overarching principles of sustainable development.

Specific data regarding the projected degree of climate change at a local level is not yet available. Given this, it is difficult to accurately determine outcomes and, in turn, commit resources to address the issues arising. However, it is clear that climate change introduces a range of risks to the shire and their effective address requires early planning and long lead times. At present, the *NSW Climate Impact Profile: The impacts of climate change on the biophysical environment of New South Wales* released in June 2010 by the former NSW Department of Environment Climate Change and Water (DECCW), appears to provide the best overall summary of potential implications for the NSW North Coast region.

### climate change adaptation risk assessment

In 2009 Ballina Shire Council conducted a climate change risk assessment process in association with its insurers to determine the foreseeable risks associated with climate change and develop a framework to ensure that potential insurable losses are within expectations.

This process relied on gathering information to produce qualitative risk assessments. The risk assessments were based on CSIRO climate change scenarios for New South Wales in relation to temperature, hot days, rainfall, wind, fire weather and sea level.

The process provided an overview of identified risks, including the risk level (extreme, high, medium and low). Of the 198 potential climate change risks considered, 2% were identified as extreme. The extreme climate change risks were related to sea level rise impacts to property and Council-owned assets. This highlighted the need to consider sea level rise in the planning, design, construction and maintenance of new and existing resources.

A further 19% of the items considered were identified as high risks and were associated with changes in rainfall, sea level rise and extreme storm events. These risks were related to the management of infrastructure and property services, recreational facilities and natural resource management.

Examples of the identified risks include increasing maintenance costs for infrastructure, inundation of Council-owned assets due to sea level rise, more frequent disruption of transport and communication services due to more frequent extreme storm events, and loss of beach amenity and dune system damage as a result of increased risk of coastal erosion.

## predictions for the North Coast region

### Changes in climate



#### Temperature

Virtually certain to rise. Average daily temperatures are likely to increase in all seasons, with the greatest increases in winter (by 2.0 to 3.0 °C).



#### Rainfall

Will increase in summer and autumn and decrease in winter.

### Physical responses



#### Sea Level

Virtually certain to rise. Sea level is projected to rise 0.4m by 2050 and 0.9m by 2100, based on 1990 levels.



#### Run-off

Substantial increases in size and depth are likely in summer.



#### Fire

Fire regimes are likely to change, with increasing fire frequency likely towards 2050.



#### Droughts

Short-term droughts are likely to become more severe. Medium to long-term events are likely to be less severe.



#### Floods

Rising sea levels and catchment-driven flooding are likely to increase flood frequency.

### Regional impacts



#### Land

The major coastline impact is likely to be from sea level rise. Erosion is likely to increase on the steeper slopes of upper catchments.



#### Settlements

Sea level rise and the resulting erosion are likely to have substantial impacts on coastal settlements, beaches, public infrastructure and residential and commercial property.



#### Ecosystems

Those vulnerable to change include saline wetlands, low-lying coastal ecosystems and fragmented forests in the hinterland



## government policy

Council's activities and operations in relation to climate change are guided and directed by State and Federal Government policy. The information provided below is a summary of information collated by the NSW State Government on documents relevant to local government planning for climate change.

### National

There have been a number of national publications on climate change related issues since the since release of the IPCC AR3 report in 2001, including the *National Biodiversity and Climate Change Action Plan* which was released in 2004.

The final report of Professor Ross Garnaut's national review into the impacts of climate change in Australia commissioned by the Commonwealth Government was released in 2008. It recommended a number of national medium to long-term policies and policy frameworks to improve the prospects for sustainable prosperity. The Update Paper 5: "the science of climate change" was released in March 2011 and confirmed the validity of the science and concluded that current rates of change lie at or above earlier expectations.

Significantly, shortly after the 2007 Federal election the Commonwealth Government ratified the Kyoto Agreement.

### State

The NSW Government's preparation of a comprehensive Climate Change Action Plan (CCAP) consistent with national and international recommendations has been deferred pending a Federal Government resolution of issues relating to a national carbon emissions trading scheme. A number of other initiatives independent of a carbon emission scheme have, however, been released. These include:

**NSW Sea Level Rise Policy 2009** (former DECCW) - outlines the NSW Government's objectives and commitments in relation to sea level rise adaptation. The policy identifies sea level rise projections of a 40cm increase by 2050 and 90cm increase by 2100 relative to 1990 levels as a planning benchmark.

**NSW Coastal Planning Guideline: Adapting to Sea Level Rise 2010** (former Department of Planning (DoP)) - provides guidance with respect to the consideration of sea level rise in land use planning in NSW.

**Formal State directives** - Formal directions to councils, with respect to the consideration of climate change within local plans, are contained within Section 117 Ministerial directions, State Environmental Planning Policies, Regional Strategies and the Standard Instrument Local Environment Plan (SILEP).

**Flood Risk Management Guide: Incorporating sea level rise benchmarks in flood risk assessments & Coastal Risk Management Guide: Incorporating sea level rise benchmarks in coastal risk assessments 2010** (former DECCW) - provide technical advice in relation to data collection for use in modelling coastal erosion and flood events and guidance for the inclusion of sea level rise planning benchmarks into floodplain risk assessment and management.

### Regional

**NSW Climate Impact Profile 2010** - includes discussion of the North Coast region. A number of townships are identified as being particularly vulnerable to sea level change as well as various local ecosystems, including low lying subtropical rainforest.

**Climate Change Risks to Australia's Coast** - includes a NSW based overview and selected case studies from a number of central and north coast local government areas.

**Ozcoasts** - the Australian Online Coastal Information website (Ozcoasts) supported by the Commonwealth Government, is a publicly accessible interactive online data base that allows access to a variety of estuary management modules that can be applied at the local level. A climate change module was added in 2010 and provides links to sea level rise maps and other estuary elevation and modelling products.

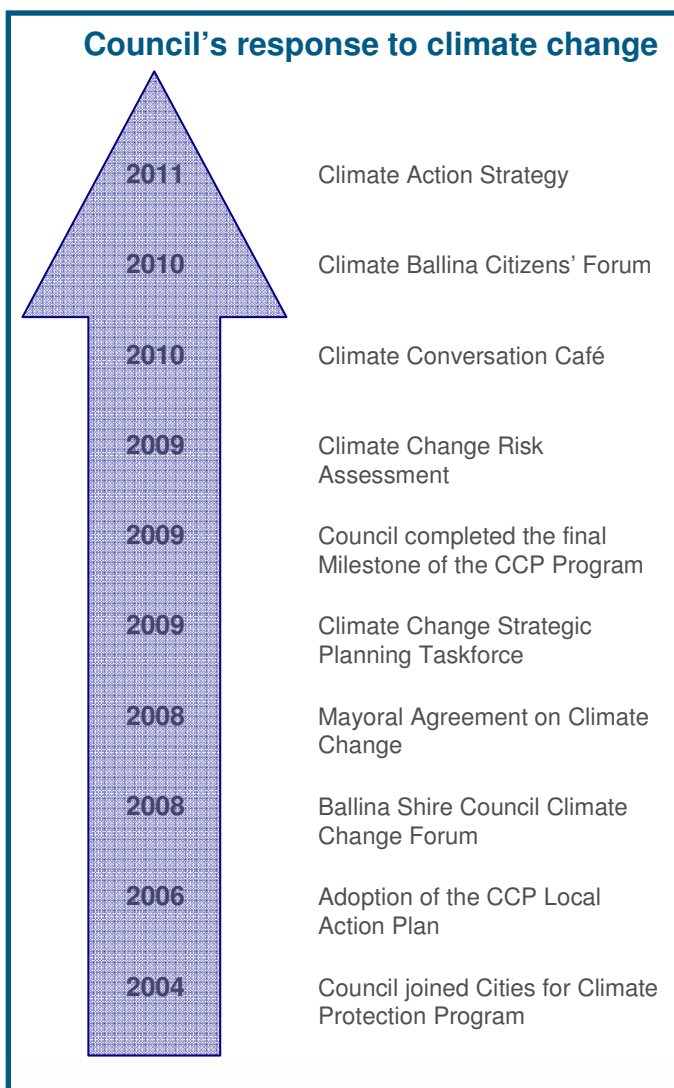
**NSW Biodiversity and Climate Change Adaptation Framework** - identifies actions directed at improving regional and local knowledge of climate change impacts.

**Priorities for Biodiversity Adaptation to Climate Change 2010** - lists Office of Environment and Heritage (OEH) priorities over the next five years in relation to biodiversity and the support it will provide for protecting areas important for biodiversity adaptation to climate change, such as habitat corridors, climate refuges and high conservation value areas.

**Coastal Zone and Estuary Management Plans** - establish local policy in relation to coastline and estuary management.

## how does climate change fit into Council's corporate planning?

Council has been acting in relation to climate change for a number of years. Council's first significant commitment to reduce greenhouse gas emissions was joining the Cities for Climate Protection Program (CCP) in 2004. Lessons learnt from this program indicate that Council needs to incorporate climate change into its corporate planning processes if it is to respond adequately to the risks posed by climate change.



The NSW Department of Premier and Cabinet's integrated planning and reporting requires councils to prepare, in accordance with the Local Government Act 1993 and the Local Government (General) Regulation 2005, a 10 year Community Strategic Plan (CSP) and accompanying four year Delivery Programs that are designed to meet, as far as is possible, the objectives and visions set out in the CSP. This Climate Action Strategy meets many of the priorities and visions articulated by the community in the CSP. It also seeks to direct resources toward projects that will meet these priorities and visions.

Community engagement undertaken by Council in developing the CSP showed that the environment was an important priority for our shire as a whole. It also showed that individual and collective action to lessen the risks posed by a changing climate is seen to be an area in which Council is not 'doing as much' as the community would like it to do. These priorities, as well as those provided by the Climate Ballina Citizens' Forum and Climate Ballina Conversation Café, which directly engaged the community on the issue of climate change, have informed the development of this Climate Action Strategy.

This Climate Action Strategy identifies Council's climate change response strategies and a series of key opportunities relating to both mitigation of greenhouse gases and adaptation to climate change. The strategy is designed to integrate with a variety of Council's function areas in order to both inform policy and decision making, and be informed by other activities of Council. In this way, the strategy is designed to be a part of Council's corporate strategic direction and decision making rather than being a stand alone document.

Diagrammatically, the Climate Action Strategy fits within Council's corporate planning framework in the following manner.



## cities for climate protection program

Ballina Shire Council has successfully achieved Milestones 1, 2, 3, 4 and 5 of the Cities for Climate Protection Program (CCP). This was a global program co-ordinated in Australia by the International Council for Local Environmental Initiatives - Local Governments for Sustainability, Australia/ New Zealand (ICLEI-A/NZ).

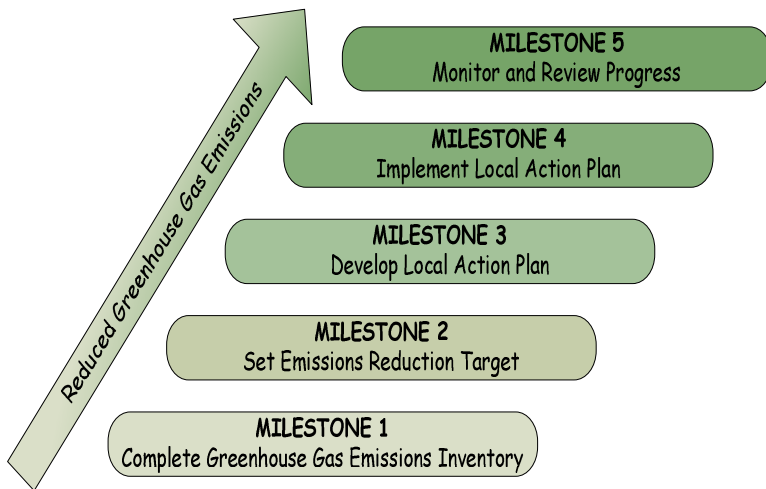
The CCP program aimed to provide a strategic framework for local governments to identify major sources of greenhouse gas emissions, determine an emission reduction goal and develop an action plan to

reduce these emissions and achieve the goals that were set. CCP involved a milestone framework designed to assist Council in progressing through the program. In moving through the milestones, the program focused on two key areas, being emissions attributable to corporate (Council) activities and those attributable to community based activities.

Actions completed under this program included the retrofit of all Council's PCs with LCD monitors, the introduction of green travel initiatives in the workplace, downsizing the vehicle fleet to contain more 4 cylinder vehicles, a public lighting audit, community education programs to reduce household emissions, an energy efficient homes trial and the provision of energy efficient light globes and shower heads to households in the shire.

Milestone 5 was completed in 2009, and it was evident from the review of the emissions data that Council's corporate emissions are continuing to increase despite significant decreases in energy use in its main administration building, vehicle fleet and in the corporate waste sector. The review indicated that energy use has increased in the water and sewer and street lighting sectors. This appears to be largely a result of additional infrastructure that has been built in recent years to respond to the need for increased service provision across the shire. Achieving Milestone 5 has enabled Council to assess its progress towards its reduction goals and provides an opportunity to reflect on its experiences in implementing climate change related actions.

Since achieving Milestone 5 and completing the CCP Program, Council has progressed its response to climate change in various ways. These approaches have now been consolidated into this Climate Action Strategy. This Climate Action Strategy seeks to broaden Council's response to climate change to include both mitigation and adaptation strategies. Actions specific to these strategies that relate to reducing corporate emissions or supporting community action on climate change are included in Council's Environmental Action Plan. Future reporting on progress towards emission reduction, however, will focus solely on Council's corporate activities due to the difficulties in verifying community sector emissions.





The Climate Ballina Citizens' Forum was a 2 1/2 day event that was hosted by Council to increase its understanding of our community's perceptions and concerns around climate change. It also provided clarity on the responses required to address these community concerns and the expectations of Council's role in this response. This forum was based around a process called 'deliberative democracy'; a

form of public participation where a cross section of the community comes together to talk about issues and their possible solutions. The forum involved 20 Ballina Shire residents, selected from an initial group of 2000, to work with Council to come up with local ways of responding to the potential impacts of climate change. The group met with Council staff to listen to presentations from some of Australia's experts on climate change and discussed different aspects of climate change and the implications for the Ballina Shire. The outcomes of the forum have been important in assisting the elected Council determine approaches to respond to climate change. Of the 53 recommendations put forward, 40 were accepted by Council, 4 were noted and 2 deferred. Many recommendations covered areas of Council's operations whilst others extended to other Local, State, Federal agencies and community groups. The list of accepted recommendations (as defined by the Citizen's Forum) is provided below. The recommendations from the Citizens' Forum specific to Council's operations have been used to inform the development of this Climate Action Strategy and other relevant Council documents.

1. Make Council premises/ infrastructure as energy efficient as possible as a model for residents.
2. Council to investigate incentives for people who install solar panels and other energy efficient measures on existing housing.
3. Council to investigate and consider available options for the management of sea level rise risks and severe weather events in relation to low lying settlements in the shire.
4. Council/State government to investigate removal of impediments to evacuation of Ballina (e.g. widening of bridges, removal of bottlenecks).
5. As part of a biodiversity strategy, Council and State Government to identify, conserve and enhance flora and fauna corridors to enable fauna and flora migration if the climate demands it.
6. Encourage and develop appropriate bus services with State Government and private bus companies (small buses more frequent).
7. Educate community on existing bus services.
8. Fast forward implementation of cycleway/ mobility plan, including on road lanes (cycleways) and support a cycling culture.
9. Investigate light rail connections.
10. Promote existing website for carpooling.
11. Council to set up a 'bicycle loan/share' system.
12. Ensure new buildings have sustainable technology such as solar power, solar hot water and rainwater tanks.
13. Recommend to State Government/ community that primary and secondary schools teach science /environment theory in relation to local environment.
14. Council to seek advice from Aboriginal elders and involve Aboriginal people in responses to climate change.
15. Council to continue using these kinds of democratic processes (citizens' forum) to both inform/ educate and learn from the community and to ensure diversity of participants (include Aboriginal people).
16. Develop a brochure and web page on care of water tanks.
17. Build display homes to educate the community about what is possible in terms of ESD.
18. Council to provide advice to community on innovative low cost technologies.
19. Recommend school education on good waste minimisation and management practices.
20. Plain English community information sheets.
21. Communicate local climate change information through social networking technology.
22. Council to provide/support climate change education and debate in schools.
23. Council providing timely and accurate risk information that does not alarm the community.
24. Council to promote the environmental programs that it is currently running.
25. More energy is put towards 'climate change' education in schools (particularly high schools).
26. Council to show leadership in relation to establishment of a local centre for distribution of local and regional produce (lower emissions and sustainable local economy and local-social cohesion).
27. Council to support/ enable community gardens, school gardens, local farmers market and backyard vegetable gardens.
28. Council's emergency response plans to take greater consideration of risk of increasing and more severe extreme weather events.
29. In response to communities' need at a neighbourhood level to protect vulnerable members during extreme weather events (e.g. floods, storms, fire, heat waves etc).
30. Encourage Council to lobby Government for the continued development of community education and support programs delivered by emergency services. Council to continue to assist by providing the local context to those programs.
31. Develop a warning system for the town/s that is coupled with an emergency plan that the community understands (e.g. a storm is coming, siren goes off and people know what to do).
32. Protect prime agricultural land.
33. Liaise with industry and stakeholders to stop the burning of cane on site.
34. Research pathway to legislation on not burning cane.
35. Council to plant more native trees, but not in places where they create a bushfire hazard near houses.
36. Investigate funding partnerships with private sector.
37. Lobby State and Federal government for adaptation funding based on Ballina Shire being a high risk/vulnerability to climate change.
38. Lobby State and Federal government to assist with funding for adaptation to climate change in shire.
39. Form alliance with other coastal shires in NSW to collaborate on funding from State Government.
40. Investigate funding available for communities at risk from State, Federal, and international bodies.

## adapting to a changing climate

The purpose of this document is to identify areas Council will need to address over the short to medium term to respond to identified climate change risks, especially those that have the potential to impact upon the services that we currently deliver to our community.

Adapting to climate change impacts requires a multi-disciplinary approach that involves collaboration between all levels of government, business and the community. Adaptation is a complex and on-going process; a process built upon risk assessment, prioritisation and adaptive management.

This strategy outlines what Council has determined to be an appropriate response to climate change at this point in time, based on current Council roles and responsibilities, government direction, scientific knowledge and our community's expectations. All of these factors can, and are, likely to change over time and mechanisms to support adaptation are still being developed. As a result, this plan has been designed to be a flexible 'work in progress' document that can be easily reviewed to reflect these changes.

Although we are faced with a number of substantial challenges in dealing with a changing climate, there are also opportunities to be gained. This strategy identifies areas in which we can improve the way we do things, especially in regard to waste disposal and energy use to reduce atmospheric emissions and improve resource efficiency. There is potential, through dealing with these challenges to identify opportunities for minimising costs and investing in more sustainable activities. We also have the opportunity to promote a culture shift across Council that integrates climate change initiatives into corporate planning and work programming. There are opportunities for ongoing engagement with our local community on climate change and how we are to respond.

The opportunities for climate action contained in this strategy are grouped under key Council functions. The key function areas are governance and sustainability planning, flood and coastal management, infrastructure and asset management, watercycle management, biodiversity and environmental management and community health and wellbeing.

This Climate Action Strategy provides a direction for how we as a Council are planning for a future of changing climate conditions in our shire. It outlines ways in which we can respond to the potential impacts of this change, along with strategies to limit the amount of greenhouse gas emissions that we produce and how we intend to incorporate these across Council's functions.

**Climate change adaptation** involves making adjustments to our existing activities and practices so that vulnerability to potential climate change impacts is reduced. **Climate change mitigation** is the management and reduction of the greenhouse gas emissions that cause climate change.

Council has been undertaking mitigation actions to reduce greenhouse gas emissions associated with buildings, streetlighting, waste, transport, and water and sewerage systems for a number of years through the Cities for Climate Protection Program. Based on government policy and scientific data, it is prudent to plan for change and associated adaptation.

This strategy provides a dual approach that addresses both mitigation and adaptation strategies in responding to climate change.



## our aspiration

*To establish Ballina Shire Council as a local government entity that is progressive with respect to addressing climate change related issues via the implementation of a planned response to climate change over time.*

## our goals

- To become a local leader in the North Coast region with respect to climate change planning, climate change action and resource sharing.
- To engage in climate change learning and discussion with government, the community, academic and scientific organisations on an ongoing basis.
- To establish internal policy incorporating contemporary climate change knowledge and technology responses across Council's operational fields.
- To integrate climate change considerations into Council's long term operational activity programming.
- To provide for cultural shift within the Council organisation that supports integrated consideration of, and responses to, climate change issues.
- To provide resources to support ongoing and planned responses to climate change.





## governance and sustainability planning

*Governance ensures active engagement between Councillors, staff and the community as well as other relevant government and non government agencies. Sustainability planning is responsible for providing detailed information relevant to decisions the Council makes regarding planning for the shire's future, whilst embracing the principles of sustainability. This function is also responsible for implementing planning directives from the Council and the State Government.*

### strategies

- Adopt climate sensitive design principles.
- Capacity build internal staff resources and knowledge.
- Incorporate climate change considerations into corporate policy and local planning policy.
- Monitor and report on climate change issues and Council's responses.
- Establish partnerships to support knowledge and resource sharing and ongoing learning.
- Establish ongoing funding streams for the implementation of climate change initiatives.
- Involve the community in the development of policy and responses to climate change.

### opportunities

Incorporate climate sensitive design standards into asset management, maintenance and capital work programs.

Provide ongoing staff training and learning opportunities in relation to climate change.

Integrate climate change considerations into urban growth planning for the shire.

Undertake ongoing review of climate change related risk assessment and management planning.

Form partnerships with local government, scientific, community and academic organisations to support collective responses to climate change.

Lobby government for funding and policy consistency to support responses to climate change risks.



## climate ballina - conversation café

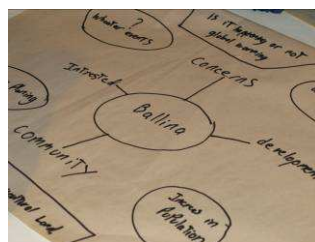
In July 2010 Council hosted the first large scale community discussion about what concerns local people in relation to climate change and how we might best respond to the challenges which lie ahead. The Climate Ballina Conversation Café drew together over 100 randomly chosen community members for three hours at the Ballina RSL Club to focus on the topic of climate change. Participants were asked in small round table groups to discuss two questions. The first was 'what concerns you about climate change?' and the second was 'how can we respond to a changing climate here in Ballina Shire?' The responses to these questions were shared with the participants of the Climate Ballina Citizens' Forum. Recommendations from this forum have been used to provide Council with knowledge of the community's understanding, concerns and expected responses regarding climate change. The following provides an overview of the concerns and responses raised by the participants of the conversation café.

### Concerns

*Social responsibility (low income earners)*  
*Who pays for responding to climate change*  
*Health impacts on water quality*  
*Need for rules and processes*  
*Buffer zones disappearing*  
*Careful not to over react*  
*Knowledge is power*  
*Extremes at both ends of spectrum*  
*Natural cycle*  
*Buffer zones for new sea levels*  
*Good information needed*  
*Impacts on future generations*  
*Water supply*  
*Political influence on issues*  
*Environment being degraded regardless of climate change*  
*Population management*  
*Sustainable agriculture*  
*Could be good outcomes, e.g. cleaning up the way we do things*  
*Flooding – low level shire / sea and river levels*  
*Population increases land and drinking water impacts*  
*Costs eg rates*  
*Population management*  
*No respect for planet*

### Potential responses

*Better building design i.e. facing north, energy efficiency*  
*Incentives for sustainable building*  
*Need for better planning re flooding, drainage, runoff, etc*  
*Council to stop spending money on beach and river front protection*  
*Organic waste provided to farmers*  
*Planning controls to reflect energy efficient outcomes including orientation and solar energy*  
*More opportunities to comment*  
*Restrict development on flood prone land*  
*Council lead by example*  
*Identify assets that need protection*  
*Reposition moveable heritage items*  
*New housing developments*  
*Carbon neutral shire OR carbon negative*  
*Council education and communication*  
*Regional food security*  
*Whitegoods collection*  
*Reducing greenhouse gases is easy in Ballina: bike paths, local food, reduce waste*  
*Dredge river and bar*  
*Adult education*  
*Better building designs with incentives*  
*Tree corridors as part of development and wider tree planting*  
*Buffer zones*  
*Education on sustainable living practices*  
*Free recycling*  
*Clean up service*  
*Transparency with development applications*  
*Council remove petrol blowers from parks and gardens*  
*Reduce mowing area*  
*Timeframes – retreat or stay*  
*Proactive and reactive approaches required eg DA's*



### key related Community Strategic Plan outcomes

- Diverse and balanced land use
- Transparent and accountable governance
- A built environment contributing to health and wellbeing

### further information

- Community Strategic Plan
- Delivery Program
- Local Growth Management Strategy
- Local Environmental Plan
- Operational Plan
- Ballina Shire Combined Development Control Plan



## flood and coastal management

*Flood and coastal management refers to Council functions that carry out works and activities associated with infrastructure related to stormwater and drainage; bridges, wharves, jetties and boat ramps; flood mitigation and canal maintenance and foreshore protection. It also relates to the establishment of floodplain and coastline management policy that guides planning and development in the shire.*

### strategies

- Monitor floodplain and coastal risks to the community and infrastructure.
- Engage community to increase awareness of climate change related flood and coastline hazards.
- Establish management strategies for identified flood and coastline hazards.
- Incorporate State Government climate change policy into floodplain and coastline management planning.
- Collaborate with local and State Government to share knowledge and technical solutions.

### opportunities

Integrate floodplain and coastal management information into S149 planning certificate system.

Provide improved community access to floodplain and coastal management information.

Integrate floodplain and coastal management policy into local planning frameworks.

Implement floodplain and coastline management plans.

### key related Community Strategic Plan outcomes

- A healthy natural environment
- Resilient and adaptable communities
- Diverse and balanced land use

### further information

- Ballina Flood Study
- Coastal Zone Management Plan for the Ballina Coastline
- Wardell and Cabbage Tree Island Floodplain Risk Management Study
- Local Environmental Plan
- Ballina Shire Combined Development Control Plan
- Emergency Risk Management Plan



## coastal zone management plan

Council is working with the NSW State Government to develop a management plan that will ensure the Ballina Shire coastline continues to provide the ecological, cultural, recreational and economic benefits residents and visitors currently enjoy. The Ballina Coastline Hazard Definition Study (2003) found that the Ballina Shire coastline is subject to three forms of erosion:

- Short term storm erosion (associated with major storm events, sometimes called 'storm bite');
- Long term erosion (associated with differences in the amount of sand entering and leaving beach 'compartments' as it moves northwards along this stretch of coast), and
- Climate change shoreline recession (associated with water encroaching inland as sea levels rise).

Part one of the Ballina Coastline Management Study (2007) identifies the ecological, cultural, heritage, recreational and economic values of the Ballina Shire coastline. Part two identifies where coastal values may be under threat from coastal hazards and considers a variety of options (such as seawalls and beach nourishment) for the management of coastal hazards.

Council's Coastal Zone Management Plan will identify management measures to address identified hazard risks to coastal values in the shire. With respect to climate change, the plan will have regard for the implications of projected climate change risks on coastal hazards (including sea level rise). As such, the Coastal Zone Management Plan is a key component of Council's planning for the address of climate change impacts in Ballina Shire.

In identifying responses to coastal hazards, the management plan will draw on policy and advice from the NSW Government, as well as feedback and outcomes from community engagement in the plan preparation process. Ultimately, the Coastal Zone Management Plan for Ballina Shire will be a strategic plan to guide the funding and implementation of preferred actions for the management of coastal hazards and values in Ballina Shire.



## floodplain management planning

Located partly within the Richmond River floodplain, a large proportion of Ballina Shire is relatively low lying and subject to potential impacts from flooding. In response to potential flood risks, Council is engaged in the preparation of management planning for the floodplain to guide responses in relation to potential flood events. In accordance with the NSW Government's Floodplain Development Manual, Council has undertaken a detailed investigation into the characteristics of the Richmond River floodplain and potential associated flood impacts relevant to Ballina Shire. Analysis of the floodplain is contained in the Ballina Floodplain Management Study (2005), the Ballina Flood Study Update (2008) and the Wardell and Cabbage Tree Island Floodplain Risk Management Study (2007).

Based on Council's analysis of the floodplain, including detailed modelling of potential flood events, Council is preparing a Floodplain Risk Management Study and Plan. The purpose of these documents is to assess potential flood related risks to urban areas, safety, the environment and infrastructure, and establish preferred management actions to address the identified risks.

In relation to climate change, it is important to note that parts of Ballina Shire are subject to flood related risks regardless of the implications of climate change. These risks may arise from a Richmond River flood, storm surges from the ocean or localised intense rainfall events. However, climate change, and in particular, sea level rise, may result in more widespread flood related risks and a greater level of flood impact. Given this, Council's investigations into floodplain management involve consideration of climate change and sea level rise in the identification of potential risks and responses. Similar to Council's Coastal Zone Management Plan, the Floodplain Risk Management Plan is a key component of Council's planning for the address of climate change impacts in Ballina Shire.

The management plan will draw on policy and advice from the NSW Government, as well as feedback and outcomes from community engagement in the plan preparation process. Ultimately, the Floodplain Risk Management Plan for Ballina Shire will be a strategic plan to guide the funding and implementation of preferred actions for the management of flood related risks in Ballina Shire.



## infrastructure & asset management

*Infrastructure and asset management assumes ownership for Council's roads, drainage, sewerage system, footpaths, cycleways, built assets, commercial premises and other civil engineering assets. This function includes construction and maintenance of Council owned infrastructure; survey and design for engineering works; infrastructure planning; asset management and contract management as well as providing engineering advice and support for development proposals.*

### strategies

- Ensure Council's infrastructure and assets are resilient to the potential impacts of climate change.
- Improve energy efficiency across all sectors of Council.
- Improve the management of the shire's waste to reduce associated greenhouse gas emissions.
- Reinvest savings derived from improved water and energy efficiency into ongoing improvements.
- Engage the community and staff in improving energy efficiency across all sectors of Council.

### opportunities

Review infrastructure plans having regard for potential climate change implications.

Identify Council owned assets at risk from climate change impacts.

Audit Council owned buildings and develop site management plans to identify opportunities to minimise climate risks and increase energy and water efficiency.

Establish energy, water and fuel use monitoring for Council owned infrastructure.

Determine the feasibility of biochar as an opportunity for carbon sequestration.

Implement community waste education programs to reduce volume of waste entering landfill.

Use public facilities as demonstration sites for the community on climate sensitive design principles.



## waste wise

All urban domestic residents in the shire use a three-bin waste collection service with weekly garden/organics collection and fortnightly recyclables and residual (mixed) waste collection. This will potentially divert up to 50% of residential waste going to landfill which equates to around 70 tonnes per week. Additionally, this will result in reduced leachate and methane production at the Ballina Shire's landfill site.

Compost bins and worm farms are provided at cost price to Ballina Shire residents who wish to gain the many benefits of composting and worm farming at home. Compost, when added to a garden, improves soil nutrients, microorganism levels and ability to hold water. Worms in a worm farm break down nearly all kinds of fruit and vegetable scraps and convert them to liquid fertiliser (worm tea) and castings which can be used as potting mix for growing seedlings and is also an excellent source of nutrients for plants.



## powered by the sun

To reduce emissions and save costs, Ballina Shire Council has installed solar power systems on the Ballina Library, Ballina Community Services Centre, the Ballina Waste Facility, the Lennox Head Cultural and Community Centre and the Alstonville Leisure and Entertainment Centre.

The estimated electricity production of each 10kw system is between 41.28 and 61.92kW per day, saving between 15 and 23 tonnes of greenhouse gas emissions (equivalent CO<sup>2</sup>) per site, per year.



## a greener fleet

Council has been progressively improving efficiencies in its motor vehicle fleet through the ongoing introduction of 4 cylinder and LPG passenger vehicles. Council has also introduced bicycles to its fleet to enable staff to take up a more active and fuel efficient mode of transport for short trips.

In 2010 Council introduced B20 biodiesel for Council's fleet. Biodiesel is a non-toxic and renewable fuel made from vegetable oil or animal fat and reduces toxic exhaust emissions related to sulphur, hydrocarbons, carbon monoxide, aromatics and particulate matter. Council is using B20 to power a number of large plant vehicles.

Ballina Shire Council has also partnered with other regional councils to develop the Northern Rivers Carpool to replace its original carpooling matching service in order to increase opportunities for staff and the Ballina Shire community to take up carpooling for travel to and from work.

## key related Community Strategic Plan outcomes

- Responsible and efficient use of resources
- A built environment contributing to health and wellbeing

## further information

- Green Building/Home Checklists
- Waste Management Strategy
- Sustainable Procurement Procedure
- Environmental Action Plan



## watercycle management

*Water cycle management involves strategic and asset management planning for the shire's water supply, sewerage reticulation and effluent re-use.*

### strategies

- Ensure effective delivery of water and sewer services to the community in light of changing climatic conditions.
- Ensure standards for stormwater infrastructure and management are based on rainfall and hydrological modelling that reflects climate change predictions.
- Improve efficiency of potable water use.

### opportunities

Increase the resilience of Council services to maximise availability during adverse climate related events.

Identify changes in intensity of rainfall events impacting inflow and infiltration to wastewater network.

Collaborate with Rous Water to promote community based water demand management initiatives.

Implement Council's Water Reuse and Reticulation Plan.

Utilise reticulated waste water for the irrigation of sports fields and other open space areas, including Ballina Racecourse and Ballina Golf Course.

Utilise reticulated waste water for agriculture/ horticulture productions.



## urban water management strategy

This strategy addresses the increasing problem of water resource depletion by reducing consumption of potable water and minimising the amount of wastewater being released to the environment. The Ballina Shire Council has developed an integrated, shire-wide Urban Water Management Strategy which includes the urban centres of Ballina and Lennox Head, as well as the villages of Alstonville, Wardell and Wollongbar.

The strategy was developed in consultation with Council, community, government and semi-government authority representatives. It has embraced a number of statutory and contemporary planning principles such as the need for integrated planning and management of natural resources.

Key components of the strategy cover:

- Water quality management
- Stormwater management
- Recycled water management



## water recycling

Ballina Shire Council in conjunction with Rous Water has initiated the Ballina Heights Estate Dual Water Supply system. The system aims to reduce the demand on our precious fresh water resources by giving residents the ability to use two different types of water. Each property is supplied with two separately metered water supplies; a reclaimed water supply and a potable water supply.

Instead of using potable (drinking quality) water for watering the garden, washing the car and flushing toilets, reclaimed water is used. The reclaimed water is high quality water treated to the standards as set down by health authorities. The difference is where the water comes from.

Potable water is sourced from our limited supply of creeks feeding dams. Reclaimed water is recycled from wastewater that would otherwise be discharged to water bodies and lost.

Ballina Shire will be implementing dual water supply systems for major new developments as part of its Urban Water Management Strategy.

### key related Community Strategic Plan outcomes

- Responsible and efficient use of resources
- Resilient and adaptable communities

### further information

- Water Reuse and Reticulation Plan
- Urban Water Management Strategy
- Stormwater Management Plan



## community health and wellbeing

*Community health and wellbeing relates to Council's management of community land and facilities, as well as programs and services that sustain and improve the shire's lifestyle. It involves addressing matters that are, or are likely to be detrimental to the natural or built environment and maintaining standards of public health and safety. It also relates to Council's activities that facilitate active community participation and partnerships. Responsibilities for this function also include in the development and implementation of emergency risk management planning for the shire.*

### strategies

- Reduce vulnerability and enhance the resilience of the community to the risks of climate change.
- Improve the capacity of the community's response to climate change.
- Engage the community in climate change action and decision making.

### opportunities

Integrate climate change considerations into Council's Disaster Management Plan.

Integrate climate change considerations into asset management and design planning.

Increase the extent and connectivity of pedestrian and cycleway networks.

Educate the community with respect to local, State and Federal initiatives to reduce carbon footprints.

Support school and community based education on climate change related issues.

Improve capacity for local food resilience (community gardens and farmers markets).

Recognise and support local industries that are mitigating or adapting to climate change.

Provide climate change related information to the community.

Seek advice from the community in responding to climate change.

Support community led initiatives to address climate change.





### **northern rivers food links**

The Northern Rivers Food Links project is a council cooperation initiative of seven Northern Rivers councils and Rous Water. As a collaborative partnership, the project aims to encourage councils to support the community in working towards a more sustainable food future for the region.

This project seeks to mitigate climate change impacts associated with food production, distribution and consumption by reducing the reliance on food sourced from outside the region and increasing adoption of more sustainable food production practices. The project also seeks to enhance community resilience to climate change and peak oil impacts by keeping food affordable and accessible and tapping into local production capabilities.



### **emergency risk management strategy**

Ballina Shire Council has responded to the increasing social hazards and number of vulnerable populations in the community through the development of the Ballina Shire Emergency Risk Management Strategy. This has been especially important given the small geographical area of Ballina Shire (487 square kilometers), its population (more than 40,000), the history of natural disasters and the socio-demographic trends in the community.

The initiatives established in the Emergency Risk Management Strategy address the vulnerability of assets, the safety of the community and the protection of the land and environment (including domestic and native animals, and stock).

The plan identifies strategies that the responsible agencies, organisations and, where possible, the community and stakeholders can implement to manage the risks identified in the strategy. A primary outcome sought is to achieve better integration of community preparedness and prevention strategies as key elements of emergency risk management, thereby encouraging safer and more sustainable communities within the Ballina Shire local government area.

## **key related Community Strategy Plan outcomes**

- Resilient and adaptable communities
- People attaining health and wellbeing

## **further information**

- Community Strategic Plan
- Emergency Risk Management Plan
- Ballina Shire Disaster Plan (DISPLAN)
- Open Space Asset Management Plan
- Ballina Shire Coastal Reserve Plan of Management
- Pedestrian Access and Mobility Plan



## biodiversity and environmental management

*Biodiversity and environmental management involves working towards improving the resilience of our natural environment. This includes natural habitat areas, waterways and beaches, as well as natural places within our urban environment. This function is about Council activities that contribute towards a healthy natural environment as something valuable in itself, and for the benefits and enjoyment of the community.*

### strategies

- Integrate natural resource management into Council activity.
- Strengthen the resilience of the shire's natural environments to the impacts of climate change.
- Reduce additional stresses on the shire's natural resources.
- Collaborate across the Northern Rivers catchment to identify and preserve catchment values.

### opportunities

Develop regional reporting on the condition of natural systems.

Identify potential risks and changes to wetlands, beach amenity and dune system integrity due to sea level rise, shoreline erosion and saltwater intrusion.

Identify changes in distribution of invasive species due to changes in climate and associated loss of biodiversity.

Develop a Biodiversity Strategy for the shire that considers climate change risks in relation to ecosystems and biodiversity.

Implement and monitor Council's Environmental Action Plan across Council activity portfolios.

Integrate biodiversity management into corporate and land use planning policy.

Undertake native flora revegetation and rehabilitation programs.



## headland regeneration

This popular community event continues its goal to rehabilitate the Lennox Point headland by planting seedlings of native littoral rainforest species. In doing so, the Lennox Head community is creating a lasting natural legacy for generations to come as the rainforest is reinstated.

A large area has been planted since the event's inception, but there is still a lot more work to be done. Every year on World Environment Day, Council together with local businesses and the wider community, hold an annual Lennox Head community tree planting day to contribute to the ongoing restoration works on the headland. On the day, trees, mulch, water and some planting tools are supplied while the Lennox Head business community and volunteer groups help out with a barbecue, refreshments, entertainment and prizes.



## environmental action plan

The Environmental Action Plan (EAP) documents Council related activities and operations that aim to improve environmental outcomes. The aim of the EAP is to provide guidance to the elected Council and the community on the types of actions that are taking place within the organisation that work towards environmental sustainability.

Whilst Council has always been active in improving environmental outcomes across its areas of responsibility, the EAP represents the first time these actions have been comprehensively documented.

The EAP is a working document that is reviewed on an ongoing basis. This process provides an opportunity for Council staff, Councillors and community to regularly contribute to the plan by providing good ideas that work towards better environmental outcomes for the shire.

## key related Community Strategy Plan outcomes

- A healthy natural environment

## further information

- State of the Environment Report
- Reserve Management Plans
- Coastal Zone Management Plan for the Richmond River Estuary
- Open Space Asset Management Plan
- Ballina Shire Coastal Reserve Plan of Management
- Environmental Action Plan



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