



Environmental Sustainability Strategy 2017-2021

Mayor's Forward



Welcome to the Moira Shire Council's Environmental Sustainability Strategy (ESS) 2017-2021.

Moira Shire is blessed with a range of unique environmental features including four major waterway

systems, wetlands, forests and grasslands. Many of these have significant environmental values as well as being important for our economy and our health and wellbeing.

As a Council, we recognise the importance of environmental sustainability. We have a proud history of working collaboratively with a range of stakeholders to achieve environmental outcomes. Thank you to all of our regional partners – we look forward to continuing to work productively with the community for many years to come.

This is the second ESS prepared by Council. This version has been restructured in to a user-friendly format that is more easily shared within Council and key partners including the community. It will be used to inform Council decisions and guide investment in environmental initiatives. It aligns with key regional, State and Federal Government directions and feeds into our Council plan, Municipal Strategic Statement and other Council documents.

The achievements report demonstrates the significant progress that we have made in the last few years. A few highlights include:

- The success of our award winning kerbside organics collection service and Watts Working Better street lighting projects;
- Involvement in the Fruit Industry Employment Program;
- Cobram landfill rehabilitation;
- Endorsement and implementation of the Roadside weed and pest animal management program.

The ESS has been structured around seven key areas. These areas will guide Council's actions in working towards longer term goals. These areas are:

- Environmentally accountable Council;
- Community engagement;
- Partnerships;
- Climate change adaptation and mitigation;
- Conservation of biodiversity;
- Sustainable management of water; and
- Sustainable management of waste.

We look forward to continuing to work with our partners and the broader community to implement this strategy.








It is my pleasure to endorse this strategy on behalf of my fellow Councillors.

Cr Gary Cleveland
Mayor, Moira Shire Council
April 2017

Acknowledgement of Country

We, the Moira Shire Council, would like to acknowledge the traditional owners of the land upon which we meet and pay our respects to their Elders both past and present.

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This strategy was adopted by Council on 26 July 2017.



Environmental Sustainability Strategy 2017-2021 Summary

Vision: Community working together for an environmentally sustainable future.

The vision will be achieved by realising long-term goals:

- Council activities make an overall positive impact on our natural environment; and
- Industries, businesses and the general community actively care for our natural environment.

Focus areas	Performance indicators (by 2021)
 Environmentally accountable Council	<ul style="list-style-type: none"> • Waste from Council activities is reduced. • Council's consumption of energy (by vehicles and office-based activities) is reduced. • Ecologically Sustainable Design Principles are considered in the planning stage of all Council projects (capital works, subdivisions, new buildings, building renovation). • Environmental sustainability features in the Council Plan and other Council Strategies as they are reviewed and updated. • Environmental sustainability is considered across all areas of Council, in all decisions and in project implementation.
 Community engagement	<ul style="list-style-type: none"> • 75% of schools in Moira have been involved in environmental sustainability projects. • 25% increase in business sector involvement in environmental sustainability projects. • Moira's environment and environmentally sustainable living are celebrated.
 Partnerships	<ul style="list-style-type: none"> • Key stakeholders continue to endorse partnerships for implementing the ESS (e.g. Environmental Sustainability Advisory Committee). • Funding 'won' (and shared), from government and 'non-traditional' sources. • Council participates in 20 partnership projects annually. • Cooperation agreement for delivery of environmental activities developed and signed by key partners. • Partnership program established to enhance Moira Shire section of the River Murray e.g. RiverConnect. • Council shares and celebrates successes with partners and the community.
 Climate change – adaptation and mitigation	<ul style="list-style-type: none"> • Moira Shire Council corporate Emissions Reduction Plan developed and implemented. • 25% of Council's electricity is from renewable sources*. • Greenhouse gas emissions are reduced by a further 20% on 2016 levels. • Two community based energy efficiency and/or renewable energy projects. <p><i>*To be confirmed through the development of an emissions reduction plan.</i></p>
 Conservation of biodiversity	<ul style="list-style-type: none"> • Increased the area under conservation covenants and biodiversity management agreements in Moira Shire from 2016 levels by an average of 10% per year over 4 years. • Actively supported a minimum of two large-scale multi-partner programs per year which deliver biodiversity conservation outcomes. • Achieved a 'net gain' in native vegetation for Council activities*. <p><i>*Where actions to compensate unavoidable losses contribute to longer term gains in quality and quantity.</i></p>
 Sustainable management of water	<ul style="list-style-type: none"> • Improved Council contributions to instream and wetland water quality. • Stormwater management meets State Environment Protection Policy (Waters of Victoria) minimum requirements. • All Council assets have efficient water supplies through technology and governance improvements.
 Sustainable management of waste	<ul style="list-style-type: none"> • Finalised and implemented Waste Management Business Plan. • Increased diversion from landfill across our three main waste streams: <ol style="list-style-type: none"> a. Municipal solid waste b. Commercial and industrial c. Construction and demolition. • Greenhouse gas emissions from landfill have declined from 2016 levels.

Strategic context – Council

This Environmental Sustainability Strategy (ESS) will guide Council in setting environmental sustainability policies and determining roles, responsibilities, and priorities for implementation. Moira Shire formally started documenting this journey with the development of a Natural Environment Strategy in 2006, followed by an ESS in 2012. There have been numerous sub-strategies and plans along the way, and a review of the 2012 ESS demonstrated a high level of achievement (Appendix 4).

This ESS provides a sharper sense of direction and action, with a tighter and more concise presentation of 4-year performance indicators and the inclusion of long term goals.

Vision for Moira Shire ESS:

Community working together for an environmentally sustainable future.

The vision will be achieved by realising long-term goals:

- Council activities make an overall positive impact on our natural environment.
- Industries, businesses and the general community actively care for our natural environment.

Role of Council in environmental sustainability:

For Council to lead by example and support the community in transitioning to environmental sustainability.

Purpose of this Strategy:

To provide an easily shared guide for Council to work towards its vision and long-term goals for environmental sustainability.

The ESS provides an easily shared guide for Council to achieve its vision and long-term goals. Action plans will be developed as needed to guide implementation of the Strategy.

Moira Shire Council works in partnership with a range of stakeholders to achieve environmental sustainability outcomes (see Appendix 2). This Strategy focusses on Council's responsibilities and areas of influence as a local government authority. Council's role will vary from being a leader in certain aspects to providing a supporting partnership role in others.

Moira Shire Council recognises that the wellbeing of our community is linked to that of our natural environment. Therefore Council is dedicated to managing all natural environmental assets by not only preserving, but also enhancing, their ecological functions.

Environmental sustainability is the responsibility of all areas of Council and requires a coordinated approach.

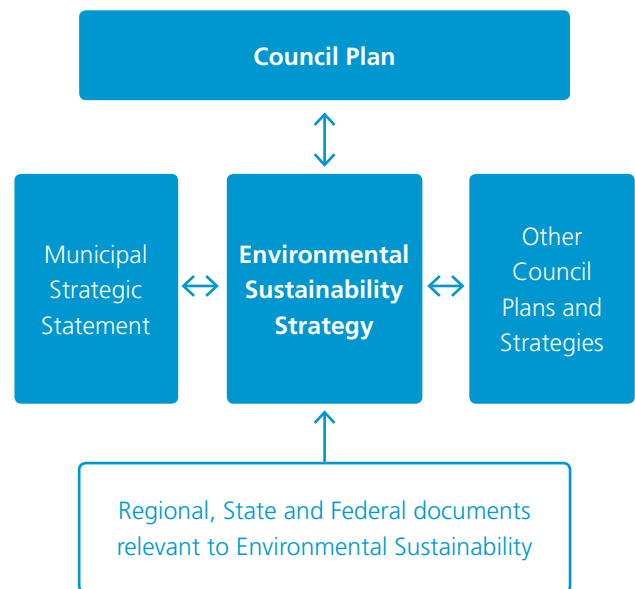
Pictorial representation of the range of partners, themes and roles within environmental sustainability in Moira Shire.



The ESS aligns with key regional, State and Federal Government documents and feeds into the Council Plan, Municipal Strategic Statement and other Council Plans and Strategies. Figure 1 shows the relationship between the ESS and key Council documents.

Funding to implement the ESS will be sought internally (Council funding) and externally such as State and Federal Governments, private sector and philanthropists. Progress towards developing projects that are economically sensible as well as environmentally sound is being made. However, there continues to be challenges in securing funding for some environmental sustainability projects where it is difficult to quantify the economic outcomes definitively and/or the environmental outcomes are very long term.

Figure 1: Relationship between the ESS and other key documents



Lake Mulwala (Photo by Robert Pyne) ▼



Strategic context – Environmental

Moira's natural assets

Moira Shire is located in the Hume region of Victoria and stretches across 4,045 square kilometres from Bundalong in the east to Barmah in the west. There are four major towns: Cobram, Yarrawonga, Numurkah and Nathalia, and numerous smaller communities scattered across the Shire. The estimated residential population is 28,820 people and approximately two-thirds of residents live and work in the Shire (Moira Shire Annual Report 2015/16).

Moira Shire has many unique and special natural features, including river and creek systems, wetlands, plains woodlands and grasslands, some of which are among the most significant of their kind. These features provide habitat for a diversity of native flora and fauna, including many threatened species and migratory birds.

Four major waterway systems flow through the Shire: the northern border follows the iconic Murray River, the Goulburn River forms the western boundary, the Ovens River the eastern boundary,

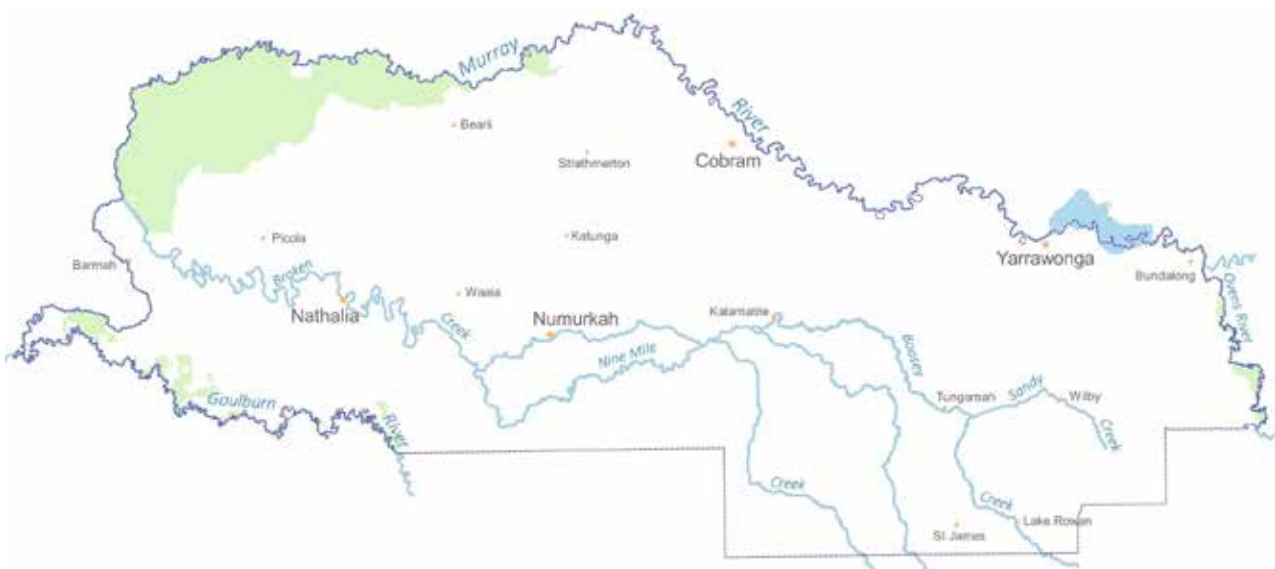
and the Broken Creek system also flows through much of the Shire. There are three major tributaries of the Broken Creek: the Nine Mile Creek, Boosey Creek, and Sandy Creek, all of which have high environmental value. The floodplain of these systems within Moira Shire covers an area of 1865km².

These waterways have significant environmental values and are significant contributors to the economic and social fabric of the Shire.

Agriculture is the primary land use and accounts for approximately 71% of the total land area, divided equally between irrigated and dryland production. This has led to a concentration of food processing industries, the Shire's largest economic sector based on output, with a large associated workforce.

The natural environment is also integral to tourism, which is the Shire's seventh largest contributor to economic output (Moira Shire Annual Report 2015/16). Many residents and visitors enjoy canoeing, swimming, fishing, camping and bush walking.

Figure 2: Major river and creek systems of Moira Shire





'A boxful of gliders', Sugar Gliders (Photo by Orlando Talamo, Whroo Conservation Management Network) ▲

The Barmah National Park, in the north-west of the Shire, and the adjoining Millewa Forest in New South Wales form the largest River Red Gum forest in the world. The complex ecology of the forest is closely linked to the Murray River and its flooding regime, creating a diverse natural habitat for a variety of wildlife, particularly waterbirds (Parks Victoria website, 2016). It is a high value area for its ecological, recreational, scientific, cultural and aesthetic values.

The conservation significance of many wetlands in Moira has been formally assessed and recognised, including the regionally significant Kinnairds Wetland and nationally significant Broken Creek and Muckatah Depression. The wetlands of Barmah-Millewa Forest are of international importance and are RAMSAR listed site (Environment Australia 2001).

Many threatened plant and animal species have been recorded in the region, including species protected under State and Commonwealth legislation. Significant species include:

- Superb Parrot – Nationally listed and Moira has the only breeding population in Victoria;
- Grey-crowned Babbler – State listed and Moira has the third most significant habitat in Victoria;
- Bush Stone Curlew, Tree Goanna and Yarran Wattle – State listed;
- Water Milfoil – Largest Victorian population, recorded at Kinnairds Wetland in Moira Shire;
- Trout Cod – critically endangered, Murray River provides habitat for a significant population; and
- Murray Cod and Golden Perch.

Soils across Moira are uniform sand or red, yellow and brown duplex soils. Topsoils are generally well drained making them suitable for agricultural production.

Moira Shire sits mostly within Riverine Plains that vary in elevation between around 150m above sea level in the north to 300m in the south east. The geomorphology within these Riverine PLains is complex with major streams and anabranches within and across catchments. They are often linked as part of a large anabranching system and connect many neighbouring streams during flood conditions.

Between the Goulburn River and Broken Creek there are vast low-lying floodplain areas. Many of the rivers and streams have perched sections which cause water to flow onto the floodplains during high flow events. This process has evolved over thousands of years and has formed the floodplains that dominate the Shire today. The floodplain of these systems within Moira Shire covers an area of 1,865 square kilometres or 46% of the Shire.

The Murray River through the Barmah-Millewa forest is also perched. Another significant geomorphic feature is the Bama Sandhills located downstream of Barmah and near Yambuna. This area is commonly referred to as 'the choke' as it limits the delivery of water to downstream areas. There are three primary openings through the Bama Sandhills: the Murray River, Madowla Lagoon (largely blocked) and the Goulburn River, which limits flooding to downstream areas such as Echuca and Moama.

Moira Shire has a temperate climate, with temperatures ranging from summer averages of 30.5°C (max) to 14.9°C (min) and winter averages of 14.2°C (max) to 3.6°C (min). Temperatures can be as low as -6°C in winter and as high as 46°C in summer. Rainfall averages between 500 and 600mm per annum.

Key challenges

To ensure Moira Shire's unique and special natural features continue to be enjoyed by future generations, and continue to provide valuable ecosystem services, we need to deal with a range of challenges. A few of the key challenges are described below.

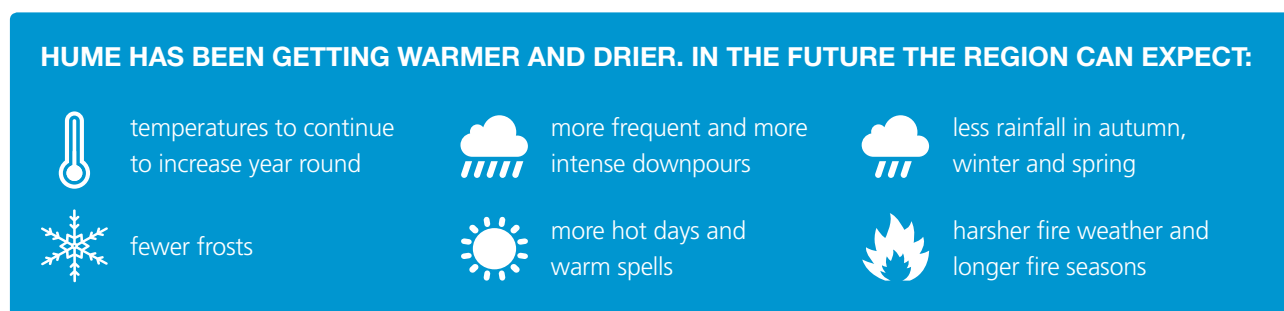
Climate change

Although our weather has always been highly variable, our climate is changing due to human-induced impacts and our weather is predicted to include more extreme events.

In the last decade, the challenges of climate extremes have been evident in Moira through drought (including times of reduced availability of irrigation water), floods, fires and storms. Predictions are that extreme events will become more frequent, temperatures will continue to increase and rainfall decrease. This will present a number of challenges for Council, businesses and the general community, so it is critical we take action now.

We have already made significant progress in reducing Council's greenhouse gas emissions, with the implementation of the Watts Working Better street lighting project and Kerbside Organics Service, which together have reduced annual emissions by approximately 1,575 tonnes CO₂E (see Appendix 4 for further details of these projects). However, there is a lot more we can do to reduce our emissions and build resilience to assist Council and the community in dealing with a changed climate.

Figure 4: Predictions for the Hume Region (includes Moira Shire)



Climate-ready Victoria: Hume. November 2015, State Government of Victoria

Ongoing loss of habitat

Ongoing loss of habitat is recognised as a very serious threat to species diversity and the ecological functioning of the landscape in Moira Shire. There are many contributing factors which include the loss of native vegetation (especially old hollow-bearing trees), poor regeneration, changes to wetlands, and removal of woody debris. An indicator of the impact of these threats is the recent decline in the conservation status of the once common Tree Goanna to Endangered in Victoria.

Remaining native vegetation covers less than 5% of pre-1750 extent, excluding State and National Parks. Native vegetation now mainly occurs along waterways, roadsides, as scattered paddock trees, and smaller native patches on private land.

Although large-scale clearing of native vegetation no longer occurs in Moira Shire, continued significant incremental losses have adverse consequences for biodiversity and the functioning of ecosystems. Incremental losses occur as a result of developments, such as road construction and maintenance, irrigation modernisation, housing and industry. Fires, drought and floods also have significant impacts, especially in landscapes where past clearing has left little remnant vegetation.



The Wunghnu-Numurkah complex fires in 2014 burnt approximately 10,000 hectares, causing significant native vegetation loss, due to the fires themselves and afterwards when trees considered to be dangerous were removed.

It was estimated that over 2,000 mature native trees were destroyed and many remnant patches were substantially damaged.

This is significant in a landscape where remnant vegetation is already scarce. Fires are a natural occurrence, however management to minimise the impact on the natural environment, especially during clean-up operations, is critical.

Figure 5: Native vegetation cover of Moira Shire



Pest plants and animals

Pest plants and animals are a serious problem in the Shire as they can impact on biodiversity and agricultural production. Landowners are responsible for the management of pest plants and animals on their properties. They have a legal responsibility under Section 20 of the *Catchment and Land Protection Act 1994 (CaLP Act)* to take all reasonable steps to eradicate regionally prohibited weeds, prevent the growth and spread of regionally controlled weeds, and prevent the spread of, and, as far as possible, eradicate, established pest animals.

As part of an amendment to the *Catchment and Land Protection Act 1994 (CaLP Act)*, the responsibility for the management of Regionally Prohibited and Regionally Controlled weeds on Council-managed roadsides has been placed with Local Government. A 'Roadside Weed and Pest Animal Control Strategy' was endorsed by Council in 2015 and areas of infestation have been mapped. Implementation of the strategy aims to ensure weeds and pest animals are systematically managed on roadsides throughout the Shire to reduce threats to native vegetation quality, farmland productivity, landscape values, biodiversity, and waterway habitats.

Population growth and development

Population growth and development needs to be managed to ensure adverse environmental impacts are avoided where possible. As the population increases, there is more pressure on existing built assets and natural resources and more waste is produced.

Amenity, largely due to the natural environment, is a major factor attracting people to live in or visit Moira Shire. Therefore, it is important to ensure population growth and increased tourism doesn't cause adverse impacts on the natural environment. This highlights the need for adequate strategic town planning and consideration of environmental impacts of new subdivisions, developments and infrastructure projects.

Managing water quality

Managing water quality and quantity is an ongoing challenge for many stakeholders in the Shire. Council has responsibilities for urban stormwater, Council's own water (potable and raw), and statutory planning processes for developments and waste water.

▼ *Grassy Woodland at Coopers Hill, Tungamah (Photo by Gary Deayton)*



Tackling the challenges

Council will build on its environmental sustainability achievements, working across all departments and in partnership with stakeholders.

The next section of the ESS has been structured around seven focus areas that will guide Council's actions in working towards the long-term goals (listed on page 4).

-  1. Environmentally accountable Council
-  2. Community engagement
-  3. Partnerships
-  4. Climate change – adaptation and mitigation
-  5. Conservation of biodiversity
-  6. Sustainable management of water
-  7. Sustainable management of waste

While it is useful to communicate and manage actions by categorising them into focus areas, the connections and overlaps between the categories is also acknowledged.

Implementation of the ESS needs to be managed as an integrated package of different parts.

The following has been identified for each focus area:

- Policy position;
- Policy rationale;
- Four-year performance indicators (by 2021); and
- Example actions.

Where possible, long-term goals have been quantified as long-term targets, and indicators of success have been suggested (refer to Monitoring for accountability and improvement section). These are still under development and will be refined over the life of this Strategy.

Silver Wattle flowering (Photo by Gary Deayton) ▼





FOCUS AREA 1:

Environmentally accountable Council

Council is committed to showing leadership in environmental sustainability. This section outlines how Council will work towards becoming more environmentally sustainable in its own operations.

Policy position

Moira Shire Council will:

- Strive to be a leader in environmental sustainability decision-making and activities;
- Integrate environmental sustainability across all areas of Council, in all decision making and project implementation;
- Comply with legislative requirements relevant to environmental sustainability;
- Be committed to environmentally sustainable procurement;
- Improve its capacity to identify, monitor and report on its purchasing, consumption and waste; and
- Strive to ensure environmental sustainability is considered in other Council plans, strategies, policies, programs and decision making at all levels.

Policy rationale

Council recognises:

- The need to act responsibly in regards to environmental sustainability; and
- There are many synergies where corporate actions that are good for the environment also have economic benefits.

Performance Indicators (by 2021)

1. Waste from Council activities is reduced.
2. Council's consumption of energy (by vehicles and office-based activities) is reduced.
3. Ecologically Sustainable Design Principles are considered in the planning stage of all Council projects (capital works, subdivisions, new buildings, building renovation).
4. Environmental sustainability features in the Council Plan and other Council Strategies as they are reviewed and updated.
5. Environmental sustainability is considered across all areas of Council, in all decisions and in project implementation.

Example actions

- Investigate and evaluate use of electric vehicles as part of Council fleet.
- Develop guidelines and processes to allow Council projects and programs to consider environmental risks and benefits.
- Review Council's consumption of resources.
- Ensure procurement processes consider long-term impacts (including construction and demolition).
- Complete development of, and implement the Environmental Sustainability Reporting Program.
- Undertake internal training for Council staff on environmental sustainability.
- Continue to use the Green team to increase understanding, awareness and action regarding environmental sustainability in the workplace and at home.
- Continue to use the Environment Working Group to foster cross-departmental discussions about environmental sustainability and reporting on ESS implementation.
- Apply Landscape Guide (2017) for Council projects.

Refer to Focus Area 4 for performance indicators and example actions relating to renewable energy.







FOCUS AREA 2: Community engagement

Policy position

Moira Shire acknowledges:

- The need for Council to support the community as it transitions to an environmentally sustainable future;
- Healthy, sustainable landscapes include people; and
- Promoting the binding connections between people, biodiversity, ecological function and community well-being is vital.

Moira Shire Council will:

- Play an important role in informing, educating and raising awareness in the community in regards to environmental sustainability;
- Continue to work with key partners to inform, educate and raise awareness in the community as we work towards an environmentally sustainable future; and
- Learn from others and collaborate to ensure best practice approaches are used to engage the community.
- Continue to increase the use of digital platforms to communicate with residents and visitors.

Policy rationale

Council recognises:

- Parts of the community are very active in environmental sustainability, others are interested but uncertain of the best course of action, and others are yet to be convinced of the need to act.

Performance Indicators (by 2021)

1. 75% of schools in Moira have been involved in environmental sustainability projects.
2. 25% increase in business sector involvement in environmental sustainability projects.
3. Moira's environment and environmentally sustainable living are celebrated.

Example actions

- Develop and implement a Public Relations Campaign around this ESS and its key messages.
- Initiate discussions with key stakeholders regarding the application of a RiverConnect-type approach (used in Greater Shepparton) to the Moira section of the Murray River.
- Contribute to and support the Goulburn Broken Stormwater Education Project.
- Network with other providers offering environmental sustainability education to schools to ensure an efficient, coordinated approach.
- Work with schools to implement environmental sustainability projects.
- Develop a scheme to reward and recognise environmental sustainability achievements in schools, businesses and other parts of the community.
- Work with the community to explore the concept of a Community Solar Garden.
- Work with the community to develop ecotourism opportunities such as bike trails, walking paths and other recreational pursuits, highlighting significant environmental features.
- Contribute to and support the Broken Boosey Conservation Management Network.



FOCUS AREA 3: Partnerships

Policy position

Moira Shire acknowledges:

- Partnerships are critical in achieving great environmental sustainability outcomes in Moira; and
- There is a broad range of stakeholders who need to work together to build an environmentally sustainable future.

Moira Shire Council will:

- Continue to foster and build strong partnerships with local, regional, State and Federal authorities and the wider community (refer to Appendix 2);
- Align with the strategic directions of key partners where appropriate; and
- Actively participate in partnership groups and projects (refer to Appendix 2) and take a lead role where appropriate.

Policy rationale

Council recognises:

- Partnerships are critical in seeking resources and investing wisely; and
- Environmental sustainability requires a landscape or Catchment-scale approach, and therefore partnerships across institutional boundaries are especially important.
- Environmental assets are used and appreciated by residents and visitors alike.

Performance Indicators (by 2021)

1. Key stakeholders continue to endorse partnerships for implementing the ESS (e.g. Environmental Sustainability Advisory Committee).
2. Funding 'won' (and shared), from government and 'non-traditional' sources.
3. Council participates in 20 partnership projects annually.
4. Cooperation agreement for delivery of environmental activities developed and signed by key partners.
5. Partnership program established to enhance Moira Shire section of the River Murray e.g. RiverConnect.
6. Council shares and celebrates successes with partners and the community.

Example actions

- Appoint new Environmental Sustainability Advisory Committee.
- Support, and lead where appropriate, the Partnership Groups listed in Appendix 2.
- Provide input into reviews of legislation where appropriate (Appendix 3 lists key legislation).
- Provide advocacy on relevant issues.
- Continue to work with land managers and relevant stakeholders to manage the impacts of tourism on the environment.







FOCUS AREA 4:

Climate change adaptation and mitigation

Policy position

Moira Shire acknowledges:

- Climate change is a critically important long-term global issue;
- Climate change will impact on the resilience of our environment, the community and the economy;
- Extreme events are predicted to become more frequent; and
- The time for action is now.

Moira Shire Council will:

- Lead by example in responding and adapting to climate change;
- Continue efforts to build resilience and support the community to do the same;
- Continue to collaborate with key partners to share knowledge and explore funding opportunities; and
- Support businesses, industries and the community in responding to climate change through mitigation and adaptation.

Policy rationale

Council recognises:

- Decreasing greenhouse gas emissions benefits our natural environment as well as having financial benefits;
- Australian Government signed the Paris Agreement at United Nations Framework Convention on Climate Change, which aims to limit an increase in global temperatures to “well below” 2°C (aspirational goal of 1.5°C); and
- Victorian Government targets:
 - Net Zero Greenhouse Gas Emissions by 2050
 - 25% of electricity from renewables by 2020 and 40% by 2025.

Long-term target

Net-zero greenhouse gas emissions for Council by 2050.

Performance Indicators (by 2021)

1. Moira Shire Council corporate Emissions Reduction Plan developed and implemented.
2. 25% of Council's electricity is from renewable sources*.
3. Greenhouse gas emissions are reduced by a further 20% on 2016 levels*.
4. Two community based energy efficiency and/or renewable energy projects.

**To be confirmed through the development of an emissions reduction plan.*

Example actions

- Develop and implement an Emissions Reduction Plan for Council.
- Review and update 'Preparing for Climate Change in the Moira Shire – Adaptation Plan'.
- Continue as a member of the Goulburn Broken Greenhouse Alliance.
- Investigate the feasibility of a community solar garden.
- Explore opportunities to use and share the tools developed through the Climate Smart Agricultural Development project.
- Investigate opportunities to influence climate change adaptation and mitigation through regulatory processes (e.g. Statutory Planning, Contract Advisory Service for the Built Environment, CASBE)
- Investigate the use of tools such as Environmental Upgrade Agreements to encourage businesses and the community to undertake energy efficiency and/or renewable energy projects.



FOCUS AREA 5: Conservation of biodiversity

Policy position

Moira Shire acknowledges:

- Sound ecological management is critical to ensuring long-term social wellbeing and economic sustainability;
- A legitimate and urgent need for greater action to mitigate degradation of biodiversity; and
- The value of working collaboratively with regional, state and federal authorities, land owners and the general public.

Moira Shire Council will:

- Implement Council's legislative and policy responsibilities to protect the health of ecological systems;
- Ensure that Council's actions and land management practices incorporate appropriate biodiversity conservation measures and demonstrate a leading example to others;
- Seek and support investment in biodiversity conservation priority areas in Moira Shire; and
- Encourage private and public land stewardship and management practices which benefit biodiversity conservation.

Policy rationale

Council recognises:

- Increasing the extent and quality of native vegetation and habitat will address adverse consequences e.g. declining species diversity, loss of soil productivity;
- The need to implement opportunities that improve adaptation to the adverse effects of climate change on biodiversity;
- Changing land use can exacerbate risks or create opportunities e.g. irrigation infrastructure renewal, bio-diverse carbon sequestration; and
- Policy and regulatory change can exacerbate risks and/or create opportunities e.g. native vegetation regulation, planned burning, environmental water delivery, investment priorities.

Long-term target

Contribute towards Goulburn Broken Catchment Biodiversity Strategy targets:

1. Increase the extent of native vegetation in fragmented landscapes by 70,000ha by 2030.
2. Improve the quality of 90% of existing habitat by 10% by 2030.
3. Increase the population viability of 20 flagship species by 2030.

Performance Indicators (by 2021)

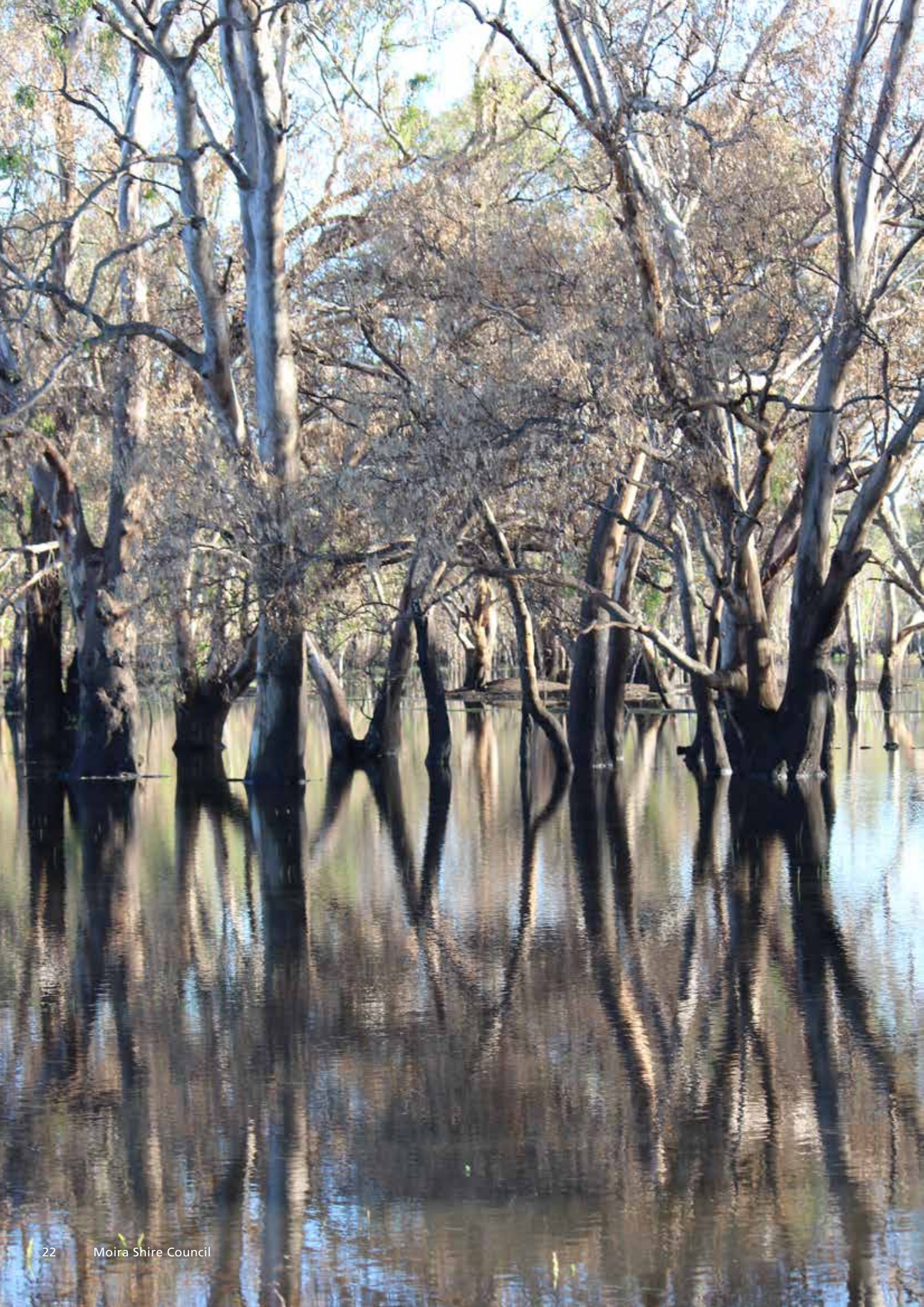
1. Increased the area under conservation covenants and biodiversity management agreements in Moira Shire from 2016 levels by an average of 10% per year over 4 years.
2. Actively supported a minimum of two large-scale multi-partner programs per year which deliver biodiversity conservation outcomes.
3. Achieved a 'net gain' in native vegetation for Council activities*.

**Where actions to compensate unavoidable losses contribute to longer term gains in quality and quantity.*

Example actions

- Continue to develop and invest in partnerships (see Appendix 2 for examples).
- Implement and monitor Council's Net Gain program to ensure it contributes to an overall gain in the quantity and quality of native vegetation and habitat.
- Establish a pilot program in Moira Shire to attract investment via a Goulburn Broken regional biodiversity fund.
- Maintain membership of the Goulburn Broken Local Government Biodiversity Reference Group, Broken Boosey Conservation Management Network and the Local Government Agricultural Floodplains Reference Group.
- Provide ongoing best practice roadside management training program for Council staff.
- Respond to, monitor and report natural resource management requests, referrals and enquiries.
- Seek opportunities to apply the successful model used in the Fruit Industry Employment Program to achieve significant biodiversity outcomes.







FOCUS AREA 6: Sustainable management of water

This section concentrates on Council's water use (urban and rural) and actions that impact on water quality of waterways and wetlands, including stormwater and domestic wastewater management.

Policy position

Moira Shire acknowledges:

- Water is the lifeblood of the region and has economic, environmental and social value;
- It is critical to use and manage potable and raw water appropriately yet differently;
- Urban stormwater outfalls into high value rivers and streams throughout the Shire and may then be re-used for a variety of purposes; and
- Efficient use of water should occur despite climatic conditions.
- The prosperity of irrigated land and environmental features should be protected through effective salinity management.

Moira Shire Council will:

- Endeavour to manage urban stormwater to meet the required standard;
- Require all new developments to meet current standards;
- Manage its own water use and waste water responsibly;
- Play an important role in educating, advocating and responding to statutory requirements regarding sustainable water use and safe disposal of waste water; and
- Support partners in their various roles in water management (see Appendix 2).
- Continue to work in partnership with the Goulburn Broken Catchment Management Authority on programs that support the Council Plan.

Policy rationale

Council recognises:

- The environmental, economic and social value of water;
- Climate change will mean Moira Shire will become drier over the long term, with more extreme events like droughts and floods; and
- The need to minimise environmental impacts of developments and urban population growth.

Long-term target

As per Goulburn Broken Catchment water quality strategy target currently being developed.

Performance Indicators (by 2021)

1. Improved Council contributions to instream and wetland water quality.
2. Stormwater management meets State Environment Protection Policy (Waters of Victoria) minimum requirements.
3. All Council assets have efficient water supplies through technology and governance improvements.

Example actions

- Review management of Council rural water allocations.
- Review and update the 2002 Urban Stormwater Management Plan and implement priority actions.
- Review and update the 2006 Sustainable Water Use Plan and implement priority actions.
- Investigate ways to incorporate Water Sensitive Urban Design principles into capital works program.
- Improve monitoring and reporting of water use.



FOCUS AREA 7:

Sustainable management of waste

Policy position

Moira Shire acknowledges:

- Consumption of goods and generation of waste have direct and indirect impacts on our environment;
- Resources are transformed to manufacture consumer goods;
- Almost all matter currently considered as waste has resource potential; and
- Diversion from landfill is preferable even if is not the cheapest option.

Moira Shire Council will:

- Deliver efficient and effective services to the community;
- Use the waste hierarchy (EPA Victoria) to guide consideration and management of waste;
- Continue to increase recycling and reduce Council waste to landfill;
- Continually work to improve its capacity to identify, monitor and report on purchasing, consumption and waste; and
- Continue to operate the Cobram landfill for Moira Shires municipal waste.
- Align Waste Management Business Plan with relevant State and Regional plans and strategies.

Policy rationale

Council recognises:

- Waste management costs continue to increase;
- There is no provision for a new landfill in Moira Shire in the medium to long term in the Draft Statewide Waste and Resource Recovery Infrastructure Plan; and
- Waste has a huge impact on our natural environment.

Long-term target

Reduced waste to landfill.

Performance Indicators (by 2021)

1. Finalised and implemented Waste Management Business Plan.
2. Increased diversion from landfill across our three main waste streams:
 - a. Municipal solid waste;
 - b. Commercial and industrial; and
 - c. Construction and demolition.
3. Greenhouse gas emissions from landfill have declined from 2016 levels.

Example actions

- Monitor and report greenhouse gas emissions from landfill.
- Build on success of residential kerbside organic service by expanding to other sections of the community.
- Maximise the life span of the Cobram landfill through diversion and recycling activities.
- Ongoing review of Councils waste services to improve efficiency of service delivery.



Monitoring for accountability and improvement

Council recognises the importance of monitoring, evaluating and reporting for accountability and also for continuous improvement.

The Environment Working Group will continue to be used as a vehicle for internal reporting (across all Departments) on implementation progress and the Environmental Sustainability Advisory Committee will continue to be an important vehicle for key stakeholder engagement.

Table 1 outlines the reporting schedule for this ESS, however there will be ongoing data collection and reporting as the Strategy is implemented e.g. specific projects or funding streams.

Long-term goals will be further refined over the life of this Strategy to allow long-term progress to be tracked. An Environmental Sustainability Reporting Program is currently being developed by Moira Shire in partnership with five other

councils, which will identify a set of indicators and associated metrics to be used to track progress and improve communication of achievements. Table 2 summarises the current long-term targets and suggests some indicators which may be used to track progress.

Table 1

Frequency	Report format
Quarterly	Informal reporting to Environmental Sustainability Advisory Committee (ESAC) on progress including actions and major achievements
Annual	Report on actions and general progress against performance indicators
Four yearly	Full review including: achievements against performance indicators; consideration of new information; drivers and trends and reassessment of priorities.

Table 2

Long-term goals	
<ul style="list-style-type: none"> Council activities make an overall positive impact on our natural environment. Industries, businesses and the general community actively care for our natural environment. 	
Indicative quantitative targets	Indicative performance measures
Contribute towards GB CMA Biodiversity Strategy targets; <ol style="list-style-type: none"> Increase the extent of native vegetation in fragmented landscapes by 70,000ha by 2030. Improve the quality of 90% of existing habitat by 10% by 2030. Increase the population viability of 20 flagship species by 2030. 	Extent and quality of native vegetation that are impacted by Council decisions
Net-zero greenhouse gas emissions for Council by 2050	Greenhouse gas emissions from Council's energy usage
Goulburn Broken CMA water quality strategy targets that were reviewed in 2002 (with an end-date of 2016) are being reviewed again	Total phosphorus, total nitrogen, dissolved oxygen, turbidity, electrical conductivity (indicates for salinity), and pH (indicates for acidity)
Long-term target to be developed for volume of water used, considering volumes of water saved through operational efficiencies (improved governance and technical efficiencies)	Volumes of water used by Council
Reduced waste to landfill	Volume of waste to landfill

Appendix 1

2012 ESS review and update

The review of the Environment Sustainability Strategy 2012 and development of the updated Strategy was guided by the Environment Sustainability Advisory Committee.

Stage 1 – Review

(June - September 2016)

- Compilation of progress against objectives.
- Survey distributed to and discussion with Environment Working Group, Environment Sustainability Advisory Committee and Environmental Services Unit staff.
- Achievements report.

Stage 2 – Develop DRAFT 2017 ESS (October 2016 – April 2017)

- Workshops held with the Environment Working Group, Moira Shire Council
- Interviews with all Moira Shire Council Managers, General Managers and Chief Executive Officer
- Interviews with Councillors
- Input from Environmental Services Unit staff, Moira Shire Council
- Rod McLennan from Rod McLennan and Associates provided advice on strategic approach
- Design work by Nerida Hippisley from Flying Pig Design

Stage 3 – Council approval for DRAFT 2017 ESS

(May 2017)

Stage 4 – Public consultation, including survey and targeted sessions for key stakeholders

(May-June 2017)

Stage 5 – Council approval and release of final 2017 ESS

(July 2017)

Appendix 2

Key partners and partnership groups

Key partners

- Goulburn-Murray Water (GMW)
- Goulburn Broken Catchment Management Authority (GBCMA)
- North East Catchment Management Authority (NECMA)
- Goulburn Valley Water (GVW)
- North East Water (NEW)
- Environment Protection Authority (EPA)
- Sustainability Victoria (SV)
- Parks Victoria
- Department of Land, Water, Environment and Planning (DELWP)
- Department of Economic Development, Jobs, Transport and Resources (DEDJTR)
- Department of Environment and Energy (Australian Government)
- Goulburn Valley Waste and Resource Recovery Group
- Landcare Groups
- Local businesses, industry and community
- Other local governments

Key organisations and responsibilities in water management

Organisation	Responsibility
Victorian Government and departments	Legislation, Policy and Regulation.
Environment Protection Authority	Enforce environmental regulation
Rural Water Corporations (GMW)	Provide irrigation, drainage and rural storage services. Administer diversion of water from waterways and the extraction of groundwater on behalf of the Minister. Deliver environmental water where it is required by the Victorian Environmental Water Holder.
Urban water corporations	Deliver water supply and sanitation services (sewerage and trade waste) within our cities and towns.
Catchment Management Authorities	Waterway health Floodplains Regional drainage Environmental water reserve
Local Government	Urban drainage and storm water management Urban flood management/ planning Sewers and drains under roads Parks and gardens On-site drainage, stormwater and domestic wastewater compliance (building, planning and septic permits)

Key Environmental Sustainability Partnership Groups

Goulburn Broken Greenhouse Alliance (GBGA) – established in 2007 to promote and support regional action on climate change. Members are drawn from the Goulburn Broken Catchment Management Authority, Goulburn Valley Waste and Resource Recovery Group and eight regional councils.

Goulburn Broken Local Government Biodiversity Reference Group (GBLRG) – established in 2006 to foster greater collaboration between Local Government and other agencies to better deal with biodiversity conservation challenges such as native vegetation and roadside management. Membership includes eight LGAs, GBCMA, DELWP, VicRoads and North East Country Fire Authority.

Environmental Sustainability Advisory Committee (ESAC) – established to provide Moira Shire Council with informed and constructive advice, input and support from expert stakeholders, industry and community towards the development of strategy relating to our environment and sustainability issues and the implementation and monitoring of those strategies.

Goulburn Broken Stormwater Education Project – joint project between Moira, Greater Shepparton, GBCMA and GVW to educate community about contamination of stormwater.

Broken Boosey Conservation Management Network (BBCMN) – works to conserve biodiversity on a broad landscape scale with private and public land managers. Activities include to sourcing investment, improving communications, delivering educational programs and facilitating on-ground works.

Local Government Agricultural Floodplains Reference Group (LGAF) – joint program with Greater Shepparton, Campaspe and GBCMA to support the planning and implementation of measures to address key natural resource management issues across the region. This group plays a critical role in identifying key opportunities for collaboration.

Murray Valley Regional Litter Taskforce – a forum of Councils that adjoin the Murray River to work with Parks Vic on waste management issues along the river.

Regional Water Monitoring Partnership (RWMP) – Around 40 organisations including Catchment Management Authorities, the Bureau of Meteorology, Local Government and Water Corporations. DELWP acts as both a partner and program manager. The partnership approach allows coordinated collection and use of surface water quality and quantity data across multiple organisations. It enables the cost of data collection and operation and maintenance to be shared.

Goulburn Broken Regional Water Quality Monitoring Working Group – This group shares information on water quality issues, coordinates implementation of strategic water quality documents and establishes sub groups to work on issues such as Domestic Waste Water Management Planning and preparing and responding to water quality issues (floods, fires, blue green algae outbreaks, fish deaths etc).

Goulburn Murray Landcare Group (GMLCN) – a voluntary, community run forum, established to support Landcare Groups in the Shepparton Irrigation Region, located in the Goulburn Broken and North Central Catchments of Victoria. The Goulburn Murray Landcare Network area covers approximately 3000 square kilometers and networks 39 Landcare groups.

Gecko Clan – a community Landcare Network which supports 19 Landcare groups stretching from Yarrawonga to the Strathbogie Ranges to Nagambie. The Gecko CLaN implements network scale projects around the themes of sustainable agriculture and biodiversity. The Gecko CLaN supports local Landcare groups to carry out projects including sourcing funding, project management and administrative assistance. The Gecko CLaN is proudly independent, but enjoys strong working relationships with government agencies and other community organisations.

Goulburn Valley Local Government Waste Forum (GVLGWF) – an advisory body to the GVWRRG which includes councillor and officer representation. The role is to develop local governments' capacity to deliver effective, efficient and sustainable waste and resource recovery planning and management across the GVWRR Region, to engage with industry, government and community stakeholders to improve waste and resource recovery management and planning, to assist the GVWRRG Board to engage councils across their region in the planning and management of waste.

Appendix 3

Legislation and policy context

There is an intricate web of policies, strategies and legislation that control and direct activities and programs in regard to environmental sustainability. These range from international strategies to national, state, regional and local policies. In many cases, Councils are governed by policy directions established by others. Key legislation, strategies, policies and initiatives relevant to environmental sustainability in Moira Shire are listed below.

Key legislation

Australian Government

- Clean Energy Act 2011
- Environment Protection and Biodiversity Conservation Act 1999
- Environment Protection and Biodiversity Conservation Amendment (Wildlife Protection) Act 2001
- Murray Darling Basin Agreement Act 1992
- Water Act 2007
- Water Amendment Act 2008

Victorian Government

- Catchment and Land Protection Act 1994
- Commissioner for Sustainability Act 2003
- Conservation, Forests and Lands Act 1987
- Country Fire Authority Act 1958
- Crown Land (Reserves) Act 1978
- Energy Efficiency Target Act 2007
- Environment Protection Act 1970
- Fisheries Act 1995
- Forest Act 1958
- Flora and Fauna Guarantee Act 1988
- Heritage Rivers Act 1992
- Local Government Act 1989
- National Parks Act 1975
- Planning and Environment Act 1987
- Public Health and Wellbeing Act 2008
- Water Act 1989
- Water (Resources Management) Act 2005

Moira Shire Council

- Community Safety and Environment Local Law 2013
- Moira Planning Scheme
- Recreation Reserve Local Law 2009

Key strategic and policy support

Victorian Government

- Protecting Victoria's Environment – Biodiversity 2036
- Our Catchments our Communities Strategy 2016
- Victoria's Climate Change Framework 2017
- Statewide Waste and Resource Recovery Infrastructure Plan 2015
- Water for Victoria 2016
- Review of the Victorian Climate Change Act 2010
- Victoria's Climate Change Adaptation Plan Directions Paper 2016
- Victorian Climate Change Adaptation Plan (2017)
- Victorian Government Take2 multi sector, state-wide pledging program
- Permitted clearing of native vegetation, Biodiversity Assessment Guidelines 2013 (currently under review).

Regional

- Goulburn Broken Catchment Regional Catchment Strategy 2013-19 and associated sub strategies
- North East Regional Catchment Strategy 2013
- Goulburn Broken Biodiversity Strategy 2016-2021
- Climate Change Adaptation Plan for Natural Resource Management in the Goulburn Broken Catchment 2016
- Goulburn Broken Local Government Regional Climate Change Adaptation Plan 2011
- Goulburn Broken Waterway Strategy 2014-2022
- Goulburn Valley Waste and Resource Recovery Implementation Plan 2016

- Shepparton Irrigation Region (Agricultural Floodplains) Land and Water Management Plan: 2016-2020
- Goulburn Broken Greenhouse Alliance Strategic Plan 2016
- Hume Regional Plan – The Hume Strategy for sustainable communities 2010-2020

Moira Shire Council

- Landscape Plan Guide for developments in Shire of Campaspe, Greater Shepparton City Council and Moira Shire Council 2017
- Moira Shire Council Plan 2013-2017
- Moira Shire Council Municipal Public Health and Wellbeing Plan 2013-2017
- Moira Shire Domestic Waste Water Management Plan 2007
- Moira Shire Council Urban Stormwater Management Plan 2002
- Moira Shire Council Sustainable Water Use Plan 2006
- Preparing for Climate Change in the Moira Shire – Adaptation Plan 2010
- Moira Shire Roadside Weeds and Pest Animal Control Strategy 2015-2020

Other useful documents;

- 'The science of climate change', Australian Academy of Science 2015
- State of the Environment Report, CSIRO, BOM, and the Australian Government 2014

Appendix 4

2012-2016 Achievements report

This report is also available as a stand alone document on the Moira Shire website

www.moira.vic.gov.au



Environmental
Sustainability Strategy 2012

Achievements Report

March 2017



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This report highlights the significant achievements resulting from the Moira Shire Council Environment Sustainability Strategy (ESS), 2012. It has been produced as part of the four yearly review of the ESS. A revised ESS will be released mid 2017.

The key purpose of the 2012 ESS was to provide strategic direction and guidance to Council in its:

- efforts to reduce its own environmental footprint;
- legislative and regulatory responsibilities;
- role as a leader, partner, advocate and educator;
- delivery of services to the community (residents, households, groups, schools, businesses, organisations, landowners and industry).

This report provides examples of the range of achievements made between 2012-2016.

The achievements cover a range of priority issues and highlight the importance of partnerships in the implementation of the ESS.

Progress has been made with 67 of the 80 objectives in the 2012 ESS.

Climate Variability and Energy Efficiency



Watts Working Better

Since the project began in 2013, over 1,700 lights have been upgraded to highly efficient LED's. We saved more than \$150,000 in electricity costs in the first year and reduced greenhouse gas emissions by more than 750 tonnes.

A unique project that achieved substantial economic and environmental benefits and delivered an important community partnership with Foott Waste and Connect Goulburn Valley.

The old lights were dismantled and recycled providing workplace opportunities for those involved.

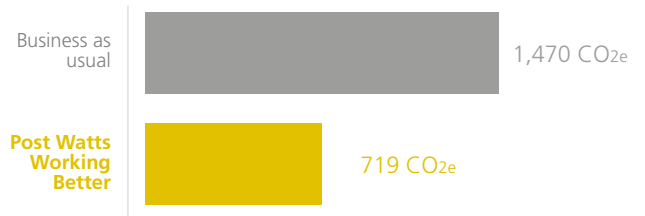
Achievements in Moira included:

- 1,708 18watt LED street lights installed over two years
- Approximate annual savings on electricity = \$150,000
- Approximate reduction in annual greenhouse gas emissions = 750 tonnes
- That's 264 cars off the road!

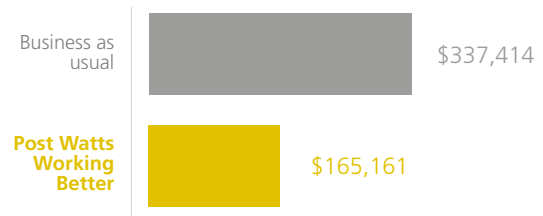
For more information go to:
www.gbga.com.au/watts-working-better

Award:
 2015 Premier's Sustainability Award

Annual Emissions of Street Lights



Annual Cost of Street Lights



Funding:

Community Energy Efficiency Program, Australian Government

Partners:

Goulburn Broken Greenhouse Alliance and 11 member Councils, lead council was Greater Shepparton City Council

Climate Variability and Energy Efficiency



Climate Smart Agricultural Development Project

A collaborative project across the Goulburn Broken Region with the aim of generating and communicating long term data and information to help Councils, land managers and the agricultural sector adapt to climate change. The project developed a mapping tool which considers topography, climate data (temperature and rain fall), soils (ph and texture) and crop requirements for seventeen different commodities. Maps produced will be useful for planning future agricultural activities.

For more information go to www.gbga.com.au/climate-smart-agriculture-development



—
Funding:

Victorian Adaptation and Sustainability Partnership, Victorian Government

Partners:

- Moira Shire Council (lead Council)
- Goulburn Broken Greenhouse Alliance
- Benalla Rural City Council
- Greater Shepparton City Council
- Campaspe Shire Council
- Strathbogie Shire Council
- Mansfield Shire Council
- Murrindindi Shire Council
- Goulburn Broken Catchment Management Authority
- Department of Environment, Land, Water and Planning



Photos: Goulburn Broken Catchment Management Authority

Fruit Industry Employment Program

Award:
Finalist 2015 Premier's Sustainability Awards

Former fruit industry workers participated in this program created in response to SPC Ardmona's 2013 cuts to fruit intake. Initiated by the Goulburn Broken Catchment Management Authority, Moira Shire joined project partners Greater Shepparton City Council, Parks Victoria and Goulburn-Murray Water.

The project was able to get started quickly due to well established relationships between these organisations.

The participants received training and developed new skills through their involvement in the project, creating new employment opportunities.

Works achieved by the team hosted by Moira Shire:

- 300ha weeds controlled
- 30km roadside weeds controlled
- 6km environmental assets fenced
- 3000 native seedlings planted
- 70 nest boxes constructed
- 30kg seed collected
- 200 hollow logs replaced
- Six tonnes of rubbish removed from environmentally significant areas

Additional work was achieved in Moira Shire by teams hosted by other partners.

Funding:

Department of Environment and Primary Industries, Victorian Government through Goulburn Broken Catchment Management Authority

Partners:

Goulburn Broken Catchment Management Authority, Goulburn-Murray Water, Parks Victoria, Greater Shepparton City Council



Goulburn Broken Local Government Biodiversity Reference Group

The group's purpose is to foster greater collaboration between Local Government and other agencies across the Goulburn Broken Catchment. The focus is on biodiversity conservation issues relevant to Local Government.

The group, initiated by Moira Shire ten years ago, has a strong focus on knowledge sharing, staff training and improving practices.

Coordinated by Moira Shire Council, there are eight Local Governments and four agency partners involved.

Funding:

National Landcare Program, Australian Government through the Goulburn Broken Catchment Management Authority

Partners:

Goulburn Broken Catchment Management Authority, eight Councils, Department of Environment, Land, Water and Planning, Country Fire Authority and VicRoads



Kinnairds Wetland

Kinnairds Wetland is a 93 hectare wetland of significance two kilometres north-east of Numurkah. It is managed by partners according to an Environmental Management Plan which was reviewed and substantially updated in 2014.

More than 150 species of birds have been recorded at the site and it is a known breeding ground for Royal Spoonbills and Australasian Shovelers.

Since 2014, 876ML of environmental water has been delivered to the wetland to encourage breeding, roosting and feeding of fauna.

Following floods in 2012 and fire in 2014, significant recovery works including revegetation, weed management, rebuilding tracks, boardwalks, bird hides and bollards have occurred.

Funding and Partners:

Goulburn Broken Catchment Management Authority, Goulburn-Murray Water



Roadside weed and pest animal management program

Council has developed and adopted a 5 year roadside weed and pest animal control strategy (2015-2020).

This strategy is managing to address Council's responsibilities for weeds and pest animals on roadsides across the Shire. This is to done to improve native vegetation quality, farm productivity, landscape values, biodiversity and waterway habitats.

—

Funding:

Victorian Government



Strathmerton Habitat Project

Threatened species habitat on roadsides and private land is being protected and improved to mitigate the impacts of the proposed Strathmerton highway deviation.

—

Achievements so far include:

- 70 hectares of revegetation to provide linking corridors
- 240 hectares of new conservation covenants
- Two year benchmarking program across 21 sites assessing flora and fauna values.

—

Partners:

Vic Roads, Goulburn Broken Catchment Management Authority, Trust for Nature, Landholders



Photos (L-R): Orlando Taloma, Whroo Conservation Management Network and Janice Mentiplay-Smith, Goulburn Broken Catchment Management Authority

Broken Boosey Conservation Management Network

Since it began in 2003, Moira Shire Council has actively supported the Broken Boosey Conservation Management Network (BBCMN). The BBCMN consists of a small committee and 644 members, around 300 of these are residents or landholders in the Moira Shire.

The BBCMN provides community based biodiversity events, presentations, workshops and field days in Moira Shire. The BBCMN produces information materials, environmental roadside signage, distributes a newsletter and manages a facebook profile.

A very professional and popular calendar is produced each year highlighting the significant native fauna and flora in the area. Photos for the calendar are obtained through a competition. Around 250 entries from local community members are received each year.

With support from the Moira Shire, the BBCMN began the 'Operation Dunnart' project in the Katamatite-Tungamah region, based on native grasslands and the native marsupial, the Fat-tailed Dunnart, which lives amongst this habitat. Grassland preservation, ecological burning and community field days are a strong focus of this exciting new project.

Award:

2013 Moira Shire Australia Day Environment Project of the Year – Woodland Bird Project

In Moira Shire activities have included:

- 200 nest boxes installed on public and private land
- In 2015-16 alone:
 - 27 hectares of revegetation
 - 2.4kms of fencing for remnant vegetation protection in Moira Shire.
 - numerous community information sessions including field trips and walks.

Partners:

Goulburn Broken Catchment Management Authority, ParksVic, landholders



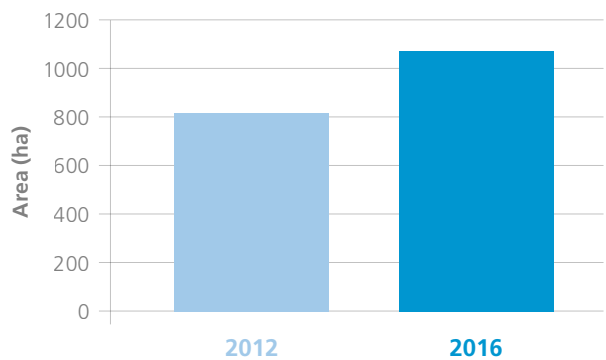
Rates Rebates for Conservation Covenants

A Conservation Covenant is a voluntary agreement between Trust for Nature and a Landowner. The Covenant is placed on the title of the land to ensure natural bushland is permanently protected.

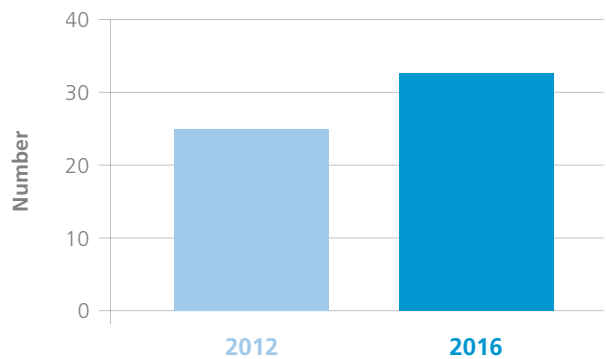
Council provides a rate rebate to landholders with a Conservation Covenant.

From August 2012 to April 2016 the number of covenants has increased by 28%, from 25 to 32. The area under covenant has also increased by 32% during this time, from 814ha-1074ha.

Area under Conservation Covenant in Moira Shire



Number of Conservation Covenants in Moira Shire





Managing Council's native vegetation 'Net Gain' program

"We are encouraged by the initiative of one of our local Shires (Moirā) which has bundled up its own calculated offsets from local road maintenance into strategic offsets resulting in enhancement of native vegetation on a large property being managed for nature conservation. This approach should be adopted across the State to maximize biodiversity outcomes"

- Goulburn Valley Environment Group

Council actively manages areas established as offsets for permitted native vegetation removal and other incremental losses from Council operations.

Three main sites being actively managed are Station Street Wetland in Numurkah, a Trust for Nature covenanted site near Naring and Kinnaird's Wetland, Numurkah. Redundant stack sites, a gravel quarry and various wetlands have also been rehabilitated and revegetated.

To date around 30,000 plants have been established, all in high priority conservation areas.

Incorporating ecologically sustainable development principles into land use and planning

The provision of a broad range of environment sustainability expertise is an important and valued Council service. For example, in the period from July 2012 to July 2016, advice, assistance and recommendations were provided to over 1,200 natural resources related enquiries, requests and formal referrals.

Sustainable Water Use, Stormwater and Water Quality



Photo: Lanie Pearce

Goulburn Broken Stormwater Education Project

A Stormwater Education Officer, employed by Goulburn Valley Water and co-funded by partners, shares information with the community about stormwater contamination and how to prevent it.

Since 2012 more than 3,500 people in Moira Shire have been involved in the project, many of these were school children. Education activities included:

- Story of a river
- Biodiversity Twister
- Drain stencilling
- Bird and Frog calls
- Water quality testing
- Pirate trail
- Nature treasure hunt
- Recycle race

Funding and Partners:

Moira Shire Council, Greater Shepparton City Council, Goulburn Broken Catchment Management Authority and Goulburn Valley Water.



Cobram Wetland – taking a different approach

During a clean out of a stormwater retardation basin in Cobram, the Operations Team noticed it had developed into a wetland.

Plans were then modified to take advantage of the natural bio-remediation capacity of the wetland.

Working closely with the earthmoving contractor, a wildlife island refuge was created along with two reed filter beds to assist in the bio-filtration of Cobram's storm water before it discharges to the Murray River.

This project is an example of seeing opportunities to modify existing plans for little cost to achieve environmental, social, infrastructure and economic outcomes.

Facilitating Environmental Stewardship



Community Education

The Moira Environment team continued to share environmental sustainability knowledge and information with community groups including schools (from pre-school to secondary) and adult interest groups (e.g. Rotary, Landcare).

Sessions have covered a range of topics including waste management, National Tree Day (including planting session), natural resource management and climate change.

Informative signage has been erected in parks throughout the Shire to explain the role composting plays in creating healthy soils.



Environment Sustainability Advisory Committee (ESAC)

This committee's role is to act as an advisory and liaison forum between Council, expert stakeholders, industry, business and the community.

ESAC contributes advice and guidance towards the development, implementation, monitoring and review of environmental sustainability strategies and plans adopted by Council.

Members include:

- Broken Creek Field Naturalists
- Department of Environment, Land, Water and Planning
- Yorta Yorta Nation Aboriginal Corporation
- Goulburn Valley Waste and Resource Recovery Group
- Trust for Nature
- Bega Cheese
- Goulburn-Murray Water
- Goulburn Valley Water
- GrainCorp Limited
- Goulburn Broken Greenhouse Alliance
- Goulburn Broken Catchment Management Authority
- Broken Boosey Conservation Management Network
- Community



Putting the Poly in your pocket

Award:

Nominated for Australia Waste and Recycling Expo (AWRE) Award 2013, Innovation category

Expanded polystyrene represents a problematic litter item as it does not decompose and often becomes water and air borne during the operation of a landfill. It is very bulky by nature and removing it extends the effective life of our landfill.

You can now deposit polystyrene at any of our transfer stations.

Polystyrene is 98% air. To help reduce costs and make it easier to transport, we've invested in a mobile compaction unit. This unit achieves a compression ratio of 40:1.

The compacted bricks produced are re-processed into new products such as plastic photo frames and coat hangers.

Funding:

Victorian Adaptation and Sustainability Partnership, Victorian Government



Cobram Landfill rehabilitation

We needed to rehabilitate a large old fill area of our landfill on a site prone to flooding and with cultural heritage overlays.

We used a cutting edge design with 17 bio-filters over vertical gas wells to tackle gas emissions and installed a geosynthetic liner to provide a barrier to prevent leakage of unwanted substances into the ground.

We turned the borrow pit into a catch and release water storage for all surface water discharged from the site. This dam also provides a water landing strip for the Cobram model aero club.

Funding:

Sustainability Victoria

Purchasing, Consumption and Waste



Kerbside Organics Service

The kerbside organics service has been a major success since it began in Cobram, Yarrawonga, Nathalia and Numurkah in 2014.

Almost 2,500 tonnes of organic waste is being turned into compost for reuse on gardens throughout the region.

The average contamination rate is around 0.4% which is significantly lower than the state average.

It is estimated this initiative will reduce Council greenhouse gas emissions by up to 825 tonnes CO₂-e per year.

Awards:

Winner 2015 Premier's Sustainability Award
 Finalist 2015 Banksia Awards

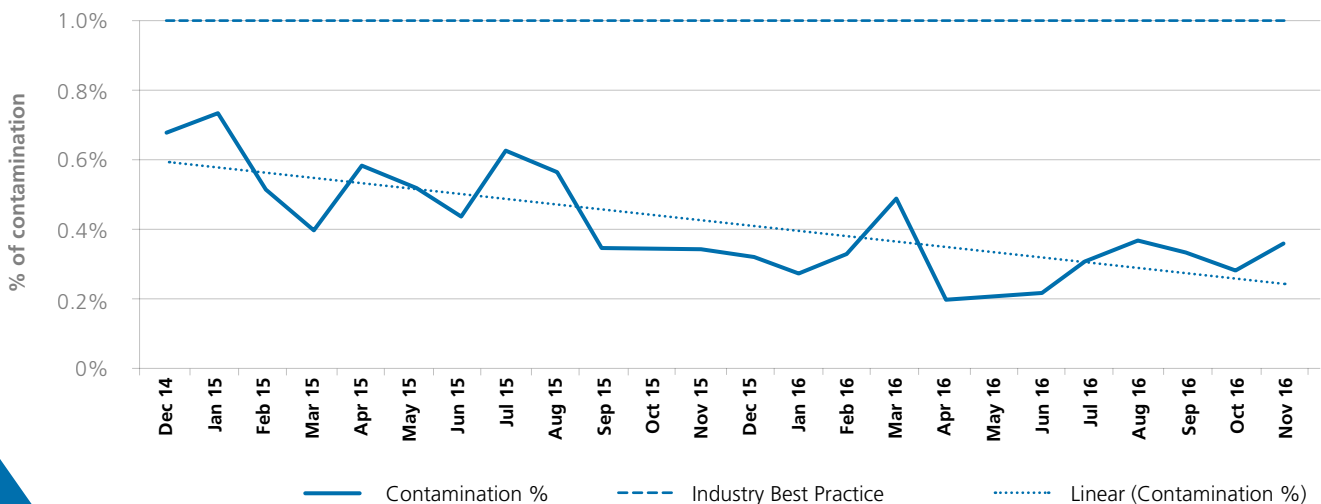
Funding:

Victorian Government

Partners:

Goulburn Valley Waste and Resource Recovery Group and member Councils

Moira Shire Kerbside Organic Service Contamination





Public Place Recycling

Council has expanded the coverage of public place recycling throughout streetscapes including Yarrowonga foreshore and recreation reserves such as Scott Reserve in Cobram.

Public Place Recycling Trailer

A mobile waste, recycling and organic disposal service which offers up to 15 bins has been made available to assist community groups with event waste management.

The trailer has been used to support community events such as agriculture shows, cultural festivals and sporting finals.

Funding:

Public Place Recycling Grants, Sustainability Victoria



Free Mulch

Moira Shire Council offers free mulch to residents as part of our commitment to responsible waste management.

The mulch has been produced from green waste deposited at our transfer stations by the public and is available 2-3 times a year from three locations.

Approximately 1,300m³ of mulch was supplied and loaded free of charge in a 12 month period for use by residents.



Purchasing, Consumption and Waste



Waste Management App

The Waste Management in Moira App was launched on 1 December 2016 to help celebrate the two year anniversary of the Kerbside Organic Service.

The Waste Management in Moira app is free and available for Android and iOS.

It provides waste service information to residents and tourists such as:

- A calendar detailing bin collection days to all addresses within Moira Shire;
- Suitable and non-suitable items for each of the three kerbside bins;
- A report function for kerbside inquiries, illegal dumping etc;
- Location, distance and travel time to Moira's transfer stations; and
- Notifications to residents regarding important information (change of collection schedule due to public holidays etc).

Council use of recycled products

Council has used the following products:

- Road seal containing recycled rubber and plastics;
- Park benches made from recycled plastic bags;
- Recycled paper;
- Mulch on garden beds; and
- Recycled concrete.

We also work with contractors to encourage recycling from demolition projects.



www.moiravic.gov.au

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Service Centre

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Front cover:

Murray River Red Gums, photo by Amanda Chadwick
Azure Kingfisher, Eastern Grey Kangaroo and
native seedlings at Australian Native Farm Forestry,
photos by Robert Pyne

Inside back cover:

Kinnairds Wetland, photo by Peter Geddes, Goulburn
Broken Catchment Management Authority
Koala, Barmah State Park, photo by Kate Bell
Tree Goanna Watters Rd Drumanure, photo by Len Soul
Wallala bridge, photo by Mark Foord