

VISION

To support and encourage an environmentally sustainable community today and for future generations.

Acknowledgement of Country

We, the Moira Shire Council, 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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MAYOR'S MESSAGE

Moira Shire is a great place to live and visit, with our diverse natural landscapes and welcoming community. We have beautiful, forested rivers and waterways, lakes, productive agricultural plains and gentle sloping hills. Our landscape supports an array of plants and wildlife.

As a community we are dependent upon the environment in which we live. A healthy environment supports a healthy community.

There are many threats to the health and wellbeing of our natural environment and for our communities now and into the future. Some of these threats include:

- Water security and availability of clean water;
- A warming and drying climate with more extreme events;
- Loss of plant and animal species, with shifts in species range; and
- High consumption habits and generation of waste.

These threats also present opportunities for change, to better value our natural environment and work towards a sustainable future.

Sustainability is a global challenge. Many countries are tackling problems associated with increased

This strategy builds on the achievement of the two previous Environmental Sustainability Strategies, 2012 and 2017. We have already made considerable progress towards Moira Shire becoming more environmentally sustainable. However, we still have a way to go.

This strategy will guide Council's operations and investment and provides direction on how we will support our community and partners over the next four years.

Welcome to Moira Shire Council's Environmental Sustainability Strategy (ESS) for 2022-2026.



Cr Libro Mustica Mayor, Moira Shire Council March 2022



STRATEGIC CONTEXT - COUNCIL

Council formally started documenting its environmental sustainability journey with the development of a Natural Environment Strategy in 2006, followed by an Environmental Sustainability Strategy (ESS) in 2012 and 2017. There have been numerous sub-strategies and plans along the way. The annual review of the 2017-2021 ESS demonstrated a high level of achievement. This ESS builds on past achievements.

Vision for Moira Shire ESS

To support and encourage an environmentally sustainable community today and for future generations.

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

The wellbeing of our community is linked to that of our natural environment. A healthy environment supports a vibrant community.

The Strategy has been prepared to be an easilyshared guide for Council and our partners, including the community, to work towards its vision and longterm targets for environmental sustainability and subsequent community wellbeing.

Moira Shire Council works in partnership with a range of stakeholders to achieve environmental sustainability outcomes (Appendix 1).

The ESS aligns with key Regional, State and Federal Government documents. The Strategy focuses on Council's responsibilities and areas of influence as a local government authority. The ESS also feeds into the Council Plan, Municipal Strategic Statement, Municipal Public Health and Wellbeing Plan and other Council Plans and Strategies. The strategic context of the ESS is further discussed in Appendix 2. Legislation and policy context.

Finally, the ESS makes clear that environmental sustainability is the responsibility of all areas of Council. Council, through its various departments delivers a wide range of services and infrastructure to the community. These services and infrastructure are, in one way or another, a part of the lives of the entire population, both those that live and visit the Moira Shire. Therefore, the ESS provides a coordinated approach that supports each department of Council to focus on and realise environmentally sustainable outcomes.

Figure 1: Relationship between the ESS and other key documents



STRATEGIC CONTEXT

- ENVIRONMENTAL

Moira's natural assets

Moira Shire is 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 29,925 people and approximately three quarters of residents live and work in Moira Shire [1].

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.

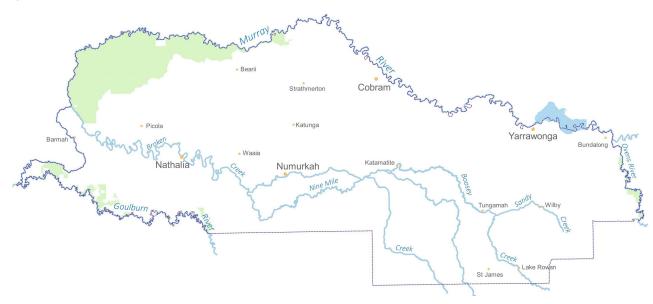
Geomorphology and climate

Geomorphology and climate determine the various ecological communities, waterways and our interaction with the land, including where we live and what we do such as agriculture and ecotourism.

Most of the shire is located on a plain largely used for agriculture ^[2,3]. Granitic and sedimentary outcrops in the south-east of the Shire provide an important source of stone and granite, and to the north, east and west of our Shire there are low-lying meander belts along the floodplains of the Murray, Goulburn and Ovens Rivers.

Moira Shire has a temperate climate, with historic temperatures ranging from summer averages of 32°C maximum to 14°C minimum and winter averages of 16°C maximum to 3°C minimum. Temperatures can be as low as -4°C in winter and as high as 46°C in summer. Annual rainfall averages range from 400mm in the west to 600mm in the south-east [4].

Figure 2. Moira Shire



Waterways

The Moira Shire forms part of the floodplain and catchment of the Murray River. 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 flows through much of the Shire. There are four major tributaries and anabranches of the Broken Creek: Nine Mile Creek, Boosey Creek, Muckatah depression (a drainage course) and Sandy Creek. The significance of our waterways is recognised through the declaration of the Lower Goulburn and Ovens River as National Parks, and the Murray River and Broken-Boosey as a State Park.

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

The waterways comprise wetlands, floodplains, tributaries and distributaries, anabranches and drainage courses that provide important ecological services by helping to:

- · transport water;
- · drain and absorb runoff,
- clean and filter nutrients, sediments, pollutants and microbes; and
- provide important habitat for wildlife.

The conservation significance of waterways has also been formally assessed and recognised, including the regionally significant Kinnairds Wetland, the nationally significant Muckatah Depression, and the internationally significant Barmah-Millewa Forest.

Vegetation Communities

River Red Gum forests are found along the length of the Murray and Goulburn Rivers with grasslands such as Moira Grass and herblands located in low lying areas [3].

The plains historically supported expansive open woodlands and grassland communities, 'grassy woodlands' ^[6]. River Red Gum and Black Box trees characterised areas with heavier soils and areas prone to flooding, Grey Box and Buloke trees in areas with heavier soils, and Yellow Box and White Cypress Pine trees in areas with lighter soils. Scattered trees and a few disturbed grasslands are what remain of these once diverse communities.

Barmah National Park

The Barmah National Park covers a vast area of the floodplain to the north-west of the Shire. When combined with the adjoining Millewa Forest in New South Wales, the Barmah-Millewa Forest forms the largest River Red Gum forest in the world (approximately 66,000 ha) and is a Living Murray Icon Site [5]. 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 and plants. The ecological significance of the Barmah-Millewa Forest is recognised through its listing as a wetland of international importance and is a RAMSAR-listed site.

The National Park is significant in that it supports many ecological, cultural and recreational values.

Agriculture

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.

Ecotourism

The natural environment is integral to tourism, which is the Shire's seventh largest contributor to employment. Many residents and visitors enjoy canoeing, swimming, fishing, camping, cycling and bush walking.

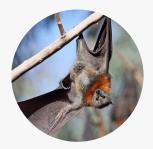
Significant Plants and Animals

Many threatened plant and animal species have been recorded in the region, including species protected under State and Commonwealth legislation. Some of the significant species found in Moira and information about why they are significant is identified below.



Superb Parrot

Nationally listed, Moira Shire has the last known breeding population in Victoria and one of the few known breeding populations in Australia^[7].



Grey-headed Flying Fox

Nationally listed, Moira Shire has one of the few near-permanent campsites in Victoria [8].



Koala

Moira Shire contains key habitat and populations in Victoria. Popular tourism drawcard



Rigid and Slender Water Milfoil

Nationally and State listed respectively, largest known populations in Victorian recorded at Kinnairds
Wetland in Moira Shire [9].



Tree Goanna and Broad-shelled Turtle

Species that are in decline and found in Moira Shire.



Grey-crowned Babbler, Bush Stone-curlew and Squirrel Glider

State listed, Moira Shire contains key habitat and populations in Victoria [10,11].



Moira Grass

The Barmah forest in Moira Shire contains the largest expanse in Southern Australia [12].



Buloke

State listed and Nationally listed threatened ecological community (Buloke woodland), key sites in Moira Shire include the Wunghnu Bushland Reserve, Yielma Bushland Reserve, and the Broken-Boosey State Park [13].







Red Capped Robin, Jacky Winter, Diamond Firetail, Brown Tree Creeper, Hooded Robins and Grey Fantail

Common woodland small insectivorous birds that are in decline $^{\left[14\right]}$.

Key challenges

To ensure Moira Shire's special and unique 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

Australia is famous for its highly variable climate, particularly its rainfall. Most of the variability in the past has been driven by seasonally specific climate drivers. However, a statistically significant trend in climate over recent decades has been attributed to human-induced impacts. This is consistent across the world and is frequently referred to as 'climate change'.

Victoria's climate has already changed, the temperature has increased by 1.2°C since 1910 and we receive less annual rainfall [15]. In the last few decades, the challenges of climate extremes have been evident in Moira Shire through drought (including times of

reduced availability of irrigation water), floods, fires and storms.

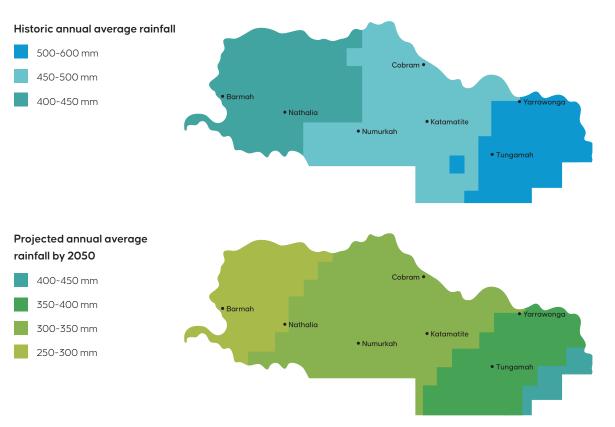
This will present several challenges for Council, businesses and the general community, so it is critical to take action now.

Based on current trends by 2050 Victoria's climate may experience the following changes [15]:

- Double the number of hot days;
- More intense rainfall events;
- Average annual temperature increase of 2.4°C; and
- Less cool season rainfall.

Council has made significant progress in reducing greenhouse gas emissions, including entering into a Power Purchase Agreement (PPA) to purchase all electricity from renewable energy sources. This reduces annual emissions by approximately 3,342 tonnes CO2-e from 2009 levels, a 72% reduction.

Figure 3. Historic rainfall average (top) and projected annual averages by 2050 (bottom) based on CSIRO A1F1 scenarios and historic climate data [16].



Ongoing loss of habitat

A range of threatening processes are negatively impacting many species found in Moira Shire. Some of the threatening processes include land clearance, firewood collection, alteration of natural flow regimes of rivers and streams, grazing, pest plant and animal species, changed fire regimes, pollution and climate change.

Shortly following European settlement of the region, wide-scale clearance of vegetation for pastures and crops on our plains commenced, having a dramatic impact on the vegetation and wildlife found in the region ^[6]. Today, the entire landscape has fundamentally changed, having a significant impact on the environment. Robinson & Mann (1996) estimate that only 0.03% of the plains retain both tree cover and an abundant understorey.

Habitat loss not only includes large hollow-bearing trees, but also shrubs, herbs and grasses, woody debris, and waterbodies. Although large-scale clearing of native vegetation no longer occurs in Moira Shire, continued incremental losses still happen.

There are many factors contributing to habitat loss, including firewood collection, legal and illegal native vegetation removal (especially old hollow-bearing trees), poor regeneration, changes to waterbodies, fires, droughts, disease, pest plants and animals, and natural senescence.

State and National Parks protect significant stands of remnant vegetation along the Broken, Boosey and Nine Mile Creeks, and Murray and Goulburn Rivers, and smaller reserves throughout the Shire. Though often highly disturbed, important habitat is also found along roadsides, as scattered paddock trees, native plantings and smaller native patches on private land.

Figure 4. Large old hollow bearing remnant tree destroyed. It can take 100-200 years for a tree to mature and develop hollows.



Changes to the hydrological regime of the rivers (less frequent and shorter duration floods and unnatural high flows in summer and low flows in winter) is supporting the regeneration of the rivers River Red Gums within the grass and herb lands. Grazing and invasion of weeds is putting further pressure on these areas.

Photo by Chris Tzaros





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 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 including cats, foxes, rabbits, etc.

The Roadside Weed and Pest Animal Management Plan 2020-2027 [17] was endorsed by Council in 2020. Implementation of this plan 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 sustainability and avoid adverse environmental impacts where possible. As the population increases, there will be more pressure on existing assets and natural resources and more waste produced. The population of the Moira Shire is projected to grow to 34,101 by 2041, a 12% increase on 2021 [18]. This highlights the need for adequate strategic town planning and consideration of environmental impacts of new subdivisions, developments and infrastructure projects.

Tourism

Amenity, largely due to the natural environment, is a major factor attracting people to live in or visit Moira Shire. The adverse impacts of tourism on the natural environment needs to be managed with partners through appropriate:

- · provision of services such as bins and bags;
- infrastructure such as designated walking paths and barriers;
- · education such as signage and digital media; and
- awareness programs such as campers' waste.

Changing land use

The change in land use across Moira needs to be managed to avoid adverse environmental impacts where possible. There has been a decline in farmland used for dairy and dairy-related activities and an increase in land used for cropping purposes. Furthermore, irrigation practices have become more efficient and solar farms have emerged across our landscape. Changes in land use can affect the retention of planted shelter belts and remnant trees, generation of waste, availability of water and support further invasion by weeds and pest animals. Working with landholders is of growing importance as land use changes.

Managing Waste

Moira Shire takes an active role in the management of waste in our municipality. Waste management services include kerbside waste collection, sorting, processing and disposal, strategic planning, community education and working with industries that repurpose waste streams such as organics and recyclables, including soft and hard plastics, paper and metals to increase diversion of waste from landfill.

Waste management has evolved from a singular focus on the protection of our health to a progressive industry committed to waste minimisation and resource management. Council is transitioning towards a circular economy, aiming to keep resources in the system for as long as possible and 100% diversion from landfill.

However, waste generated within the Shire is growing. More packaging, shorter product lifespan, marketing of consumerism and the increase of readily available appliances is promoting higher volumes of waste generated on a household basis. Added with a growing population, waste generation is increasing within the Shire, placing more pressure on our existing services and waste infrastructure.

Moira Shires Municipal Landfill has a finite capacity. The

We need to reduce our consumption of goods and promote waste avoidance, whilst also supporting recycling streams and local circular-economy initiatives. This will relieve the pressure on waste management services, over extraction of raw materials and environmental impacts. By purchasing recycled products, we are encouraging manufacturing methods that limit resource use, energy and waste.

Managing water quality and quantity

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.



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 protection of our assets, overcoming our key challenges and achieving our long-term goals.

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

- Focus area statement;
- Policy position;
- · Policy rationale;
- Performance indicators (by 2026); and
- 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.

Focus areas



Environmentally accountable
Council



FOCUS AREA 2

Community

engagement



FOCUS AREA 3

Partnerships



FOCUS AREA 4
Climate change
adaption and
mitigation



FOCUS AREA 5

Conservation of biodiversity



FOCUS AREA 6

Sustainable

management

of water



FOCUS AREA 7

Sustainable

management

of waste



FOCUS AREA 1

Environmentally accountable Council

Council is committed to showing leadership in environmental sustainability.



Policy position

Moira Shire acknowledges:

- Environmental sustainability is a key determinant for a healthy and liveable community;
- The best way to preserve Moira Shire's natural environment is for the community to value and take ownership; and
- The binding connections between people, biodiversity, ecological function, and community wellbeing is vital.

Moira Shire Council will:

- Strive to be an innovative leader in environmental sustainability;
- Integrate environmental sustainability across all areas of Council, in all decision making, project implementation and activities;
- Comply with legislative requirements relevant to environmental sustainability; and
- Increase resilience to environmental risks.

Policy Rationale

Council recognises:

- the need to establish realistic goals and ensure transparency in operations and actions as we transition to environmental sustainability;
- The need to act responsibly and meet legislative responsibilities in regard to environmental sustainability; and
- There are many synergies where corporate actions that are good for the environment also have economic benefits.

Long-term target

Environmental sustainability is considered and integrated across all aspects of Council.

Performance Indicators (by 2026)

The following performance indicators will be used to determine the successful implementation of the strategy:

- 1. Environmental sustainability is considered and integrated across all areas of Council, in all decisions and in project implementation.
- 2. Ecologically Sustainable Design Principles are implemented in the planning stage of all Council projects (capital works, subdivisions, new buildings and building renovations).
- 3. Reported annually on the implementation of the Environmental Sustainability Strategy.
- 4. Environmental sustainability features included in the Council Plan and other Council Strategies as they are reviewed and updated.

Actions

The following actions will support the implementation of the strategy:

- Consider environmental risks and benefits early in the development of Council plans, projects and programs.
- Consider environmental sustainability (e.g. weighting and criteria) in procurement processes.
- Hold regular internal training for Council staff on environmental sustainability (e.g. waste bins and reusable products).
- Utilise the Green Team to increase understanding, awareness, and action regarding environmental sustainability in the workplace and at home.
- Foster cross-departmental discussions about environmental sustainability and report on ESS implementation through the Environment Working Group (EWG).
- Apply Landscape Guide (2017) for Council projects.
- Seek internal and external funding to implement environmental sustainability projects.
- Advocate internally and externally on behalf of the environment.
- Consider immediate and ongoing (operational) implications by applying environmental cost analysis on all projects and programs.
- Review Council activities for continuous improvement and apply learnings.
- Improve consultation across departments.



FOCUS AREA 2

Community engagement

Council will raise community awareness of environmental sustainability and support the community in building resilience and creating a sustainable future.



Policy position

Moira Shire acknowledges:

- Environmental sustainability is a key determinant for a healthy and liveable community;
- The best way to preserve Moira Shire's natural environment is for the community to value and take ownership; and
- The binding connections between people, biodiversity, ecological function, and community wellbeing is vital.

Policy rationale

Council recognises:

• Environmental sustainability needs to be embraced by the community to transition to a sustainable future.

Long-term target

Community transitions towards a sustainable future.

Performance Indicators (by 2026)

The following performance indicator will be used to determine the successful implementation of the strategy:

1. Environment and environmentally sustainable living are embraced by the community.



Actions

The following actions will support the implementation of the strategy:

- Support and promote sustainability initiates (such as community gardens, citizen science projects and environmental events).
- Support partners in the delivery of education programs (such as Broken Boosey Conservation Management Advisory Group, Goulburn Broken Catchment Management Authority, Goulburn Valley Water and Goulburn Murray Landcare Network).
- Work with schools, businesses and community groups (such as Friends of Chinamans Island Nature Reserve, Yarrawonga Urban Landcare and Nathalia Wildflower Group) to implement environmental sustainability projects.
- Encourage community connection with nature and our natural features through RiverConnect and various activities.
- Promote Environmental Upgrade Agreements to businesses in Moira Shire.
- Support the development of ecotourism opportunities such as bike trails, walking paths and other recreational pursuits highlighting significant environmental features and sustainable businesses (e.g. Farm gate trail).
- Identify and minimise gaps in the walking and cycling network (such as absence of shady trees or gaps in the footpath/cycling network).
- Promote environmental sustainability achievements in schools, businesses and other parts of the community.
- Source and promote grants and bulk buys for environmental upgrades (e.g. solar rebates).
- Install and maintain public hydration stations in towns across the Shire.
- Develop and deliver educational materials and programs for schools and wider community using various educational platforms.
- Celebrate achievements through sustainability competitions and positive stories.



FOCUS AREA 3

Partnerships

Council will work with our partners to achieve environmental sustainability.



Policy position

Moira Shire acknowledges:

- Partnerships are critical in achieving great environmental sustainability outcomes; and
- A broad range of stakeholders 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 1);
- Align with the strategic directions of key partners where appropriate;
- Continue to collaborate with key partners to share knowledge and explore funding opportunities; 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 accessing resources, investing wisely and achieving great outcomes;
- Environmental sustainability requires a landscape or catchment-scale approach, and therefore partnerships across institutional boundaries are especially important; and
- Environmental assets are used and appreciated by residents and visitors.

Long-term target

Council and partners work together to enhance environmental outcomes in Moira Shire.

Performance Indicators (by 2026)

The following performance indicators will be used to determine the successful implementation of the strategy:

- Key stakeholders continue to endorse partnerships for implementing the ESS (e.g. Environmental Sustainability Advisory Committee).
- 2. Council supports and actively participates in partnership projects and programs.
- 3. Cooperation agreements for delivery of environmental activities are developed and signed by key partners (e.g. MOUs).
- 4. Council shares and celebrates successes with partners and the community.

Actions

The following actions will support the implementation of the strategy:

- Foster discussions with partner agencies and community through the Environmental Sustainability Advisory Committee (ESAC).
- Support Partnership Groups listed in Appendix 1.
- Encourage partnership groups to be highly effective with clear intent and objectives.
- Provide advocacy on environmental sustainability issues.
- Provide input into the review of legislation, regulations, strategies, and guidelines to achieve environmental sustainability.
- Continue to form new partnerships with land managers and relevant stakeholders to improve the management of our natural assets (such as manage the impacts of tourism, fire risks and water related issues).
- Partner with Yorta Yorta Nation Aboriginal Corporation (YYNAC) to deliver environmental projects on country.
- Support community groups (e.g. Superb Parrot Group) and business partnerships (e.g. tourism).
- Freely share resources between partners.



FOCUS AREA 4

Climate change adaptation and mitigation

Council will reduce greenhouse gas contributions and build resilience.



Policy position

Moira Shire acknowledges:

- Climate change is a critically important long term global issue;
- Climate change is impacting on the resilience of our environment, the community, and the economy; and
- The time for action is NOW!

Moira Shire Council will:

- Lead by example in responding to climate change through mitigation and adaptation;
- Use science-driven targets (e.g. carbon budget);
- Support the community, businesses and industries to build resilience and adapt to climate change;
- Develop a clear plan and timeline for how emission reduction targets will be achieved; and
- Review and implement Councils Corporate Emissions Reduction Plan (CERP).



Please see our CERP for detailed information and figures on current and long-term targets on Councils greenhouse gas emissions.

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);
- Interim Emissions Reduction Targets for Victoria (2021-2030)
 - 40% of electricity from renewables by 2025 and 60% by 2030.
- Victorian Government targets: Net Zero Greenhouse Gas Emissions by 2050
 - 2030 Interim target of 50% cut in emissions, 50% share of new car sales for electric or hydrogen vehicles, and 50% of electricity from renewables.
- The need to adapt and advocate for climate change and identify and respond to environmental challenges.

Long-term target

- Net zero greenhouse gas emissions for Council by 2050.
- Community to mitigate and adapt to a changing climate.

Performance Indicators (by 2026)

The following performance indicators will be used to determine the successful implementation of the strategy:

- 1. Council's Corporate Emissions Reduction Plan are reviewed and implemented.
- 2. Greenhouse gas emissions from Council are reduced to 50% of 2009 levels.
- 3. All reasonable actions are taken to reduce greenhouse emissions from landfill.
- 4. All new and existing Council buildings and works include energy efficient and sustainable design.
- 5. Community, businesses and industries are supported to reduce greenhouse emissions.
- 6. Community resilience to extreme events and a warmer climate is built at home and in our shared spaces (e.g. urban greening programs).

OFF-GRID SOLAR SYSTEMS NEW TO MOIRA SHIRE TRANSFER STATIONS Local company Cobram Electrical & Data have done an amazing job installing: • Two AWW roof mounted solar systems with SkW's lithium battery storage, are capable of providing energy for lighting, security and other utilities; and, • One SkW roof mounted solar panels with 12kW's get battery storage. This larger system can provide energy for an on-site computer, lighting, air-conditioning, ETTPOS and other utilities. Off-grid systems are an ideal choice to provide energy to houses or infrastructure not currently connected to the public electricity network. We are seeing more offgrid solar systems due to a reduction in costs over recent years. With reduced costs, no electricity bilis and its environmental benefits we can see why off-grid solar systems are becoming more popular. FOR MORE INFORMATION, SEE YOUR ENVIRONMENTAL DEPARTMENT

Actions

The following actions will support the implementation of the strategy:

- Investigate opportunities to influence climate change adaptation and mitigation through regulatory processes (e.g. Statutory Planning and Contract Advisory Service for the Built Environment (CASBE)).
- Audit greenhouse gas emissions from landfill to establish a base line for actions moving forward.
- Investigate and implement projects that reduce greenhouse gas emissions from landfill.
- Promote tools developed through the Climate Smart Agricultural Development project.
- Investigate the feasibility of a display house to promote energy efficient design and upgrades.
- Undertake urban greening projects such as reducing sealed surfaces, planting of street trees, and creating more public green spaces.
- Develop and implement a street tree policy.
- Install electric vehicle charging stations.
- Educate the community on actions they can take to mitigate and adapt to a warmer climate (e.g. micro climates and energy efficient housing).
- Support the Goulburn Murray Climate Alliance and partnership projects (e.g. naturally cooler towns).
- Educate the community on how to respond to extreme events thereby increasing community resilience.
- Support uptake of electric and hydrogen vehicles in Council fleet and for the wider community.
- Further solar panel installations and conversion of gas to solar electric on existing and future Council buildings.
- Investigate the feasibility and benefits of a carbon offset site for Council and/or Community.
- Promote activities within Council that minimise our carbon footprint (e.g. online meetings).



FOCUS AREA 5

Conservation of biodiversity

Council is committed to protecting and enhancing biodiversity in Moira Shire.





Policy position

Moira Shire acknowledges:

- The need to work with our partners to prioritise biodiversity actions;
- Our few remaining trees are vitally important in the landscape and must be protected, they provide disproportionate value to wildlife considering their limited number;
- Biodiversity is vital to ensuring long-term social wellbeing and economic sustainability; and
- A legitimate and urgent need for greater action to mitigate degradation of biodiversity.

Moira Shire Council will:

- Implement Council's legislative and policy responsibilities to protect the health of ecological systems;
- Account for and offset all of Council's native vegetation losses;
- Ensure that Council's actions and land management practices incorporate appropriate biodiversity conservation measures and are an example to others;
- Seek and support investment in biodiversity priority areas in Moira Shire; and
- Encourage and support private and public land stewardship and management practices that benefit biodiversity.

Policy rationale

Council recognises:

- Increasing the extent, diversity and quality of native vegetation and habitat will address adverse consequences (e.g. declining species diversity and loss of soil productivity);
- Changing land use can exacerbate risks or create opportunities e.g. intensive agriculture, 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 and investment priorities).

Long-term target

To protect and enhance biodiversity in Moira Shire to achieve net gain.

Performance Indicators (by 2026)

The following performance indicators will be used to determine the successful implementation of the strategy:

- Achieved a 'net gain' in native vegetation for Council activities*.
- 2. Reviewed and implemented the roadside conservation management plan.
- 3. Increased the extent, diversity and quality of native vegetation through annual rehabilitation project.
- 4. Improved community awareness and connection with nature.
- * Where actions to compensate unavoidable losses contribute to longer term gains in quality and quantity.

Actions

The following actions will support the implementation of the strategy:

- Support and plant indigenous species in urban open spaces and on public reserves (e.g. road reserves).
- Undertake grant audit permits for native vegetation removal.
- Enforce the native vegetation regulations and advocate for improvements.
- Enforce compliance within the native vegetation regulations.
- Improve community awareness of the native vegetation regulations.
- Promote community education on native plants, animals, and communities.
- Ensure Council meets its legal obligations for weed and pest animal control.
- Advocate for improvements to the native vegetation regulations.
- Improve the management of Council's nature reserves and assets (e.g. controlled burns).
- Manage and establish new offset sites for council activities that result in a loss of biodiversity.

- Participate as an active member of the Goulburn
 Broken Local Government Biodiversity Reference
 Group, Municipal Catchment Coordinator Reference
 Group; and the Goulburn Broken Catchment
 Wetland Management Group.
- Support rural properties to plant native vegetation (e.g. rural tree program) and encourage regeneration (e.g. on your guard program).
- Implement the Roadside Weed and Pest Animal Control Management Plan 2020-2027.
- Protect high conservation value vegetation regardless of tenure including paddock trees and reserves.
- Investigate cat control programs.
- Increase the area under conservation covenants and biodiversity management agreements.

Photo by Chris Tzaros





FOCUS AREA 6

Sustainable management of water

Council will work towards a future that has ample clean water for our communities and the environment.



This section discusses Council's use of water, stormwater, domestic wastewater management, the broader management of surface and groundwater, and the value of water both to the community and environment.

Policy position

Moira Shire acknowledges:

- Water is the lifeblood of the region and has economic, environmental and social (recreational and cultural) values, and these values may compete against one another;
- Open water and green spaces improve the liveability of our communities;
- Urban stormwater outfalls into high value rivers and streams throughout the Shire and may then be re-used for a variety of purposes and therefore needs to be of high quality;
- Efficient use of water should occur despite climatic conditions; and
- The prosperity of irrigated land and environmental features should be protected through effective salinity management and natural drainage courses.

Moira Shire Council will:

- Endeavour to manage urban stormwater to meet the required standard;
- Require all new developments to meet current water sensitive urban design standards;
- Manage our own urban water responsibly and in times of drought in a way that delivers greatest economic and social benefit;
- Manage our own rural water responsibly and in times of drought with respect to other rural water users;

- Manage our 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;
- Support the community to adapt to land use change and water availability and security issues;
- Support partners in their various roles in water management (see Appendix 2); and
- Work with floodplain management partners to improve the flood resilience of the catchment's people, infrastructure, land, water and biodiversity.

Policy rationale

Council recognises:

- The environmental, economic and social (recreational and cultural) value of water;
- The impact that low water availability has on our agricultural industries,
- Climate change will mean Moira Shire will become hotter and drier over the long term, with more extreme events like droughts, fires and floods; and
- The need to minimise environmental impacts of land use, developments and urban population growth.

Long-term target

Improved management of water to support the community and environment.

Performance Indicators (by 2026)

The following performance indicators will be used to determine the successful implementation of the strategy:

- 1. Improved Council contributions to instream and wetland water quality;
- 2. Stormwater management meets State Environment Protection Policy (Waters of Victoria) minimum requirement;
- 3. Implemented the Rural Water Review 2019;
- 4. Implemented the 2020 Review of the 2002 Urban Stormwater Management Plan; and
- 5. Reviewed and implemented the 2006 sustainable water use plan.



Actions

The following actions will support the implementation of the strategy:

- Develop and implement a rural water use policy.
- Implement the Recreation Reserves Water Use Review.
- Proactively manage Councils rural water to ensure sufficient water across all our sites and to opportunistically trade water or secure future years' allocations.
- Continue to manage Broken Creek user accounts.
- Support the Municipal Catchment Coordinator Reference Group and Regional Water Monitoring Partnership.
- Actively participate in the Wetland Management Group, Goulburn Broken Regional Water Quality Monitoring Working Group and Integrated Water Management North East and Goulburn Broken Forums
- Support the Goulburn Broken Drainage
 Management Strategy implementation, including
 the Salinity Public Asset Control works for surface
 and subsurface management.
- Increase the number of stormwater wetlands in our urban areas for water quality, fire, biodiversity, recreation and cooling purposes.
- Incorporate water sensitive urban design principles into all works.
- Support environmental watering, salinity and drainage, and water management programs.
- Work with partners to advocate for Sustainable Irrigation Policy to support our agricultural industries and the environment.



FOCUS AREA 7

Sustainable management of waste

Council is committed to reducing the generation of waste to landfill.



This section outlines how Council will extend the life span of the landfill, increase resources diverted by better valuing waste resources, reduce consumption and provide high value waste management services for the community.

Policy position

Moira Shire acknowledges:

- The production of waste is directly proportional to the consumption of goods;
- Most material currently considered as waste has resource potential;
- Extending a products life will reduce waste generated;
- Waste varies in its recycling potential, both in its cost to recycle and value of the end product;
- Diversion from landfill is essential; and
- Landfills have a limited life span.

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;
- Reduce consumption and production of waste;
- Continue to increase recycling and reduce Council waste to landfill:
- Participate and enable positive actions to enable a circular economy where opportunities arise;
- Continue to operate the Cobram landfill for Moira Shire's municipal waste; and
- Align the Waste Management and Services
 Strategy with relevant state and regional plans
 and strategies and statutory compliance (EPA
 Amendment Act).

Policy rationale

Council recognises:

- Waste management costs continue to increase;
- The benefits associated with diverting resources from landfill;
- There is no provision for a new landfill in Moira Shire in the medium to long term in the Statewide Waste and Resource Recovery Infrastructure Plan; and
- Waste has a negative impact on our natural environment.

Long-term target

Reduce consumption of products and waste to landfill.

Performance Indicators (by 2026)

The following performance indicators will be used to determine the successful implementation of the strategy:

- 1. Implement the Waste Management and Services Strategy 2018-2027.
- 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. Existing waste diversion services expanded to new sections of the community and increased diversion services available.
- 4. Reduced generation of waste within Council.
- 5. Improved recycling rates of Councils operations including capital works projects.

Actions

The following actions will support the implementation of the strategy:

- Incorporate management of waste (such as reduced consumption of materials, use of recycling streams and purchase of recycled products) into the procurement policy.
- Support uptake of diversion (e.g. soft plastics and printer cartridges) and consumption initiatives (e.g. Responsible cafes).
- Maintain and promote the Moira Shire Waste Info app.
- Audit kerbside recycling and organics for contamination.
- Improve availability of public recycling streams (including bin labels and skip bins).
- Collaborate with Parks Victoria to improve the management of waste generated by campers.
- Support projects and programs to create a more circular economy (e.g. reuse centres).
- Support Keep Australia Beautiful and Clean Up Australia Day campaigns and events.
- Be active members of the Murray River Litter Taskforce.
- Audit Council waste generation and investigate recycling stream options (e.g. glass crusher)
- Support recycling initiatives (such as container deposit scheme and organics and glass drop-off points).
- Support education programs to reduce material consumption and increase waste diversion.
- Support recycling projects (such as silage wrap and private recycling streams e.g. sharps, batteries and metals).
- Preference the purchase of products that are made from recycled materials.





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.



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APPENDIX 1 KEY PARTNERS AND PARTNERSHIP GROUPS

Key Partners

- Goulburn-Murray Water (GMW)
- Goulburn Broken Catchment Management Authority (GB CMA)
- North East Catchment Management Authority (NE CMA)
- Goulburn Valley Water (GVW)
- North East Water (NEW)
- Environment Protection Authority (EPA)
- Sustainability Victoria (SV)
- Parks Victoria (PV)
- Regional Roads Victoria (RRV)
- Recycling Victoria
- Yorta Yorta Nation Aboriginal Corporation (YYNAC)
- Trust for Nature (TFN)
- Department of Environment, Land, Water and Planning (DELWP)
- Department of Precincts and Regions (DJPR)
- Department of Agriculture, Water and Environment (Australian Government)
- Goulburn Valley Waste and Resource Recovery Group (GVWRRG)
- Landcare Groups and umbrella organisations Goulburn Murray Landcare Group and Gecko Clan
- · Rotary Groups
- Local businesses, industry and community
- · Other local governments

Key Community Group Partners

- Broken Creek Field Naturalists
- Friends of Chinamans Island Nature Reserve
- Goulburn Valley Environment Group
- Koonoomoo Improvement Group and Committee
- Luton Drive Community
- Nathalia Wildflower Group
- Superb Parrot Project
- Yarrawonga Mulwala Cricket Club
- Yarrawonga Urban Landcare Group

Key Environmental Sustainability Partnership Groups

Goulburn Murray Climate Alliance (GMCA)

Established in 2007 to promote and support regional action on climate change. Members are drawn from the GB CMA, DELWP, NE CMA, Goulburn Valley Waste and Resource Recovery Group and 13 regional councils. The group now extends beyond its original Goulburn Broken Catchment area, to include the North East Catchment area and has therefore extended its membership base.

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 ten LGAs, GB CMA, DELWP, RRV, YYNAC, Taungurung Clans Aboriginal Corporation 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.

Environment Working Group (EWG)

Established to engage Council's departments and Council towards the development, implementation and monitoring of strategy related to environmental sustainability and Council operations.

Broken Boosey Conservation Management Network Advisory Group

Established to provide advice and support actions aimed at improving nature conservation in the BBCMN area on both private and public land. Membership includes Moira Shire, Parks Victoria, TFN, volunteer community members and a broader group of interested people (currently around 350) who are involved through regular communications.

Municipal Catchment Coordinator Reference Group (MCC)

Joint program with Greater Shepparton, Campaspe and GB CMA 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 River Litter Taskforce

A forum of councils that adjoin the Murray River to work with Parks Victoria 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 subgroups 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 Broken Senior Combined Partners Forum

A long-standing network established by the Goulburn Broken Catchment Management Authority that brings together leaders from agencies within the Shepparton Irrigation Region. This group provides leadership and responds to drivers of change to water policy, land use, climate and farm productivity.

Goulburn Murray Landcare Network (GMLN)

A voluntary, community run forum, established to support Landcare Groups in the Shepparton Irrigation Region Victoria. The Goulburn Murray Landcare Network area covers approximately 3000 square kilometres and networks of 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.

Wetland Management Group

An advisory body to the GB CMA for the delivery of environmental watering and monitoring programs across the Goulburn Broken Catchment, and to foster greater collaboration to better deal with biodiversity conservation challenges related to the management of our waterways. Membership includes two LGAs, DELWP, GVEG, YYNAC, Taungurung Clans Aboriginal, Parks Victoria and volunteer community members.

APPENDIX 2 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.

The Local Government Act 2020

The local government sector in Victoria is administered under the *Local Government Act 2020*. This provides a framework for the establishment and operation of councils. The Act sets out the overarching governance principles and supporting principles for Council which include:

- Council decisions are to be made and actions taken in accordance with the relevant law;
- Priority is to be given to achieving the best outcomes for the municipal community, including future generations;
- The economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks, is to be promoted;
- The municipal community is to be engaged in strategic planning and strategic decision making;
- Innovation and continuous improvement is to be pursued;
- Collaboration with other councils and governments and statutory bodies is to be sought;
- The ongoing financial viability of the council is to be ensured;
- Regional, state and national plans and policies are to be taken into account in strategic planning and decision making; and
- The transparency of Council decisions, actions and information is to be ensured.

Moira Shire Council Plan 2021-25

The Moira Shire Council Plan 2021-25 guides and provides direction for the Shire during the Council's term of office. There are five strategic objective pillars identified in the Plan. The ESS contributes to delivering on goals within each of the pillars and it is fundamental to the delivery of goals under Pillar 3: A clean green environment

Pillar 3: A clean green environment

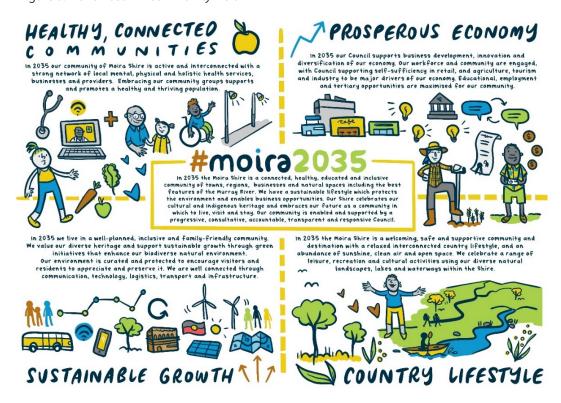
Goals 2025:

- We protect and advocate for our environment to sustain biodiversity and enhance riverine landscapes
- We will be an environmentally sustainable organisation
- We will achieve excellence and best practice in waste management
- We reduce waste to landfill with effective recycling and organic waste diversion systems
- We will adapt and advocate for climate change and identify and respond to environmental challenges
- Our natural and outdoor spaces will provide quality habitat for plants and animals as well as be places for people to enjoy
- We will work with floodplain management partners to improve the flood resilience of the catchment's people, infrastructure, land, water and biodiversity

Municipal Public Health and Wellbeing Plan

Council is required to prepare a Municipal Public Health and Wellbeing Plan to promote, improve and protect the health and wellbeing of their residents. The potential impacts of climate change are to be considered in its development.

Figure 5. Moira 2035 – A Community Vision



Moira 2035 - A Community Vision

In 2021 a panel of community members met to discuss and plan a long-term vision for Moira Shire. This ESS supports and incorporates learnings from the Moira 2035 – A Community Vision (Figure 5).

Key Australian Government Legislation

Climate Change (National Framework for Adaptation and Mitigation) Bill 2020 – to establish a national climate change adaptation and mitigation framework and Climate Change Commission.

Environment Protection and Biodiversity Conservation Act 1999 – protection of the environment and conservation of biodiversity.

Recycling and Waste Reduction Act 2020 – reduce the impacts of products and waste material.

Water Act 2007 and Water Amendment Act 2008

– management of the Murray-Darling Basin water resources, and water and water information of national interest.

Key Victorian Government Legislation

Catchment and Land Protection Act 1994 – The CaLP Act provides a legislative framework for land management including management of noxious weeds and pest animals.

Climate Change Act 2017 – manage climate change risks and achieve net-zero emissions by 2050.

Environment Protection Act 1970 and Environmental Protection Amendment Act 2019 – Environment
Protection Authority (EPA) and for the Protection of the Environment.

Flora and Fauna Guarantee Act 1988 and Flora and Fauna Guarantee Amendment Act 2019 – conservation of Victoria's native flora and fauna and management of potentially threatening processes.

Local Government Act 2020 – local government of each municipal district.

Planning and Environment Act 1987 – planning the use, development and protection of land in Victoria in the present and long-term.

Water Act 1989 and Water (Resources Management)
Act 2005 – management of water resources.

Wildlife Act 1975 (currently under review)

Other Relevant Victorian Legislation

- Commissioner for Environmental Sustainability Act 2003
- Conservation, Forests and Lands Act 1987
- Country Fire Authority Act 1958
- Crown Land (Reserves) Act 1978
- Energy Efficiency Target Act 2007
- Fisheries Act 1995
- Forest Act 1958
- Heritage Rivers Act 1992
- National Parks Act 1975
- Public Health and Wellbeing Act 2008

Moira Shire Council Legislation

Community Safety and Environment Local Law 2013

Key strategic and policy support

Victorian Government

- Victoria's North and Murray Water Resource Plan (MDBA)
- Guidelines for the removal, destruction or lopping of native vegetation 2017
- Our Catchments our Communities Strategy 2016-2019
- Protecting Victoria's Environment Biodiversity 2036
- Statewide Waste and Resource Recovery Infrastructure Plan 2018
- Victoria's Climate Change Strategy 2021

Regional

- Goulburn Broken Catchment Regional Catchment Strategy 2013-19 (currently under review)
- GB CMA's sub strategies:
 - Climate Change Adaptation Plan for Natural Resource Management in the Goulburn Broken Catchment 2016
 - Climate Change Integration Strategy 2012-2015
 - Community Natural Resource Management Action Plan 2013-2018

- Goulburn Broken Biodiversity Strategy 2016-2021
- Goulburn Broken Indigenous Participation Plan 2017
- Goulburn Broken Invasive Plants and Animals Strategy 2019-2025
- Goulburn Broken Land Health Strategy 2017-2020
- Goulburn Broken Regional Floodplain
 Management Strategy 2018-2028
- Goulburn Broken Waterway Strategy 2014-2022
- Shepparton Irrigation Region Land and Water Management Plan 2016-2020
- Shepparton Land and Water Salinity Management Plan August 1989
- Goulburn Broken Greenhouse Alliance Strategic Plan 2018-2022
- Goulburn Murray Resilience Strategy 2020
- Goulburn Valley Waste and Resource Recovery Implementation Plan 2017
- Hume Regional Plan The Hume Strategy for sustainable communities 2010-2020
- North East Regional Catchment Strategy 2013 (currently under review)
- Yorta Yorta Whole-Of-Country Plan 2021-2030

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 2017-2021
- Moira Shire Council Municipal Public Health and Wellbeing Plan 2017-2021
- Moira Shire Council Waste Management and Services Strategy 2018-2027
- Moira Shire Council 2020 review of the 2002 Urban Stormwater Management Plan
- Moira Shire Council Sustainable Water Use Plan 2006
- Moira Shire Council's Corporate Emissions Reduction Plan 2018-2021
- Moira Shire Council's Draft Roadside Conservation Management Plan

APPENDIX 3 2017-2021 ESS REVIEW AND ANNUAL REPORTS

These reports are available as standalone documents on the Moira Shire website www.moira.vic.gov.au





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