

21.02Historic
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C250card**ENVIRONMENT****21.02-1**Historic
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C250card**Catchment and coastal management****Overview**

The majority of the Cardinia Shire is contained in the Western Port catchment, which is a Ramsar wetland, with a small section in the northern part of the municipality being within the Yarra catchment. The *Port Phillip & Western Port Regional Catchment Strategy* (www.ppwrcs.vic.gov.au) describes the catchment assets and how they are interrelated. It indicates what needs to be done to manage and use the assets in a sustainable and integrated way, and outlines goals and priorities for the future.

Key issues

- Recognising that a catchment is an integrated environmental system, and that development and actions undertaken in one part of the catchment have an effect on other parts of the catchment.
- Retaining and re-establishing native vegetation along waterways to minimise erosion and sediment.
- Managing stormwater and effluent in both urban and rural areas.
- Recognising that areas within the municipality have a shallow groundwater table, which increases the potential for salinity and its impacts on infrastructure and the environment.
- Controlling the amount of water entering the groundwater table in recharge areas in order to manage salinity.
- Recognising that climate change will increase the risk from flooding.

Objective 1

To protect and improve the environmental health and social and economic values of water resources and ensure their efficient management.

Strategies

- Encourage the retention and, where appropriate, the re-establishment of native vegetation to minimise erosion and sediment entering waterways, reduce salinity and protect areas of landscape and biodiversity value.
- Encourage the protection of waterway environs including the fencing off of waterways and the re-establishment of riparian vegetation, especially in rural areas degraded by the impact of stock.
- Encourage the maintenance and upgrade of levee banks in the Koo Wee Rup Flood Protection District, particularly along the Bunyip Main Drain.
- Protect groundwater resources in the Western Port Basin.
- Protect Western Port and the associated significant estuarine, intertidal and immediate marine habitat of Western Port and promote sustainable outcomes.
- Minimise erosion and the entry of sediment into waterways associated with earthworks.

Objective 2

To effectively manage development to mitigate impacts on the operation and health of waterway systems.

Strategies

- Encourage the use of measures to manage and treat stormwater quality in both urban and rural areas including wetlands, litter and pollution traps, retarding basins and revegetation along waterways.
- Provide for the retention and treatment of domestic wastewater on-site in accordance with the *State Environment Protection Policy (Waters,)* October 2018, where reticulated sewerage is not available.
- Maximise the potential to utilise recycled wastewater for agricultural, urban and other purposes.
- Require best practice water sensitive urban design and improvements in drainage in all new developments.

Objective 3

To minimise the impact of shallow groundwater conditions and salinity on the built and natural environment, including both native vegetation and agricultural land, and to ensure that development does not contribute to increasing the risk or extent of salinity.

Strategies

- Ensure any development in an identified shallow ground water or potential salinity risk area is subject to a risk assessment which identifies appropriate mitigation measures.
- Discourage development that will be at risk from salinity or that will potentially increase the risk or extent of impacts from salinity.

Objective 4

To recognise areas within the municipality that are liable to flooding and inundation and to minimise potential risk to life, property and the environment.

Strategies

- Minimise development on land liable to flooding and inundation, and where development is permitted, ensure that the siting of buildings and works takes into account the potential depth of flooding, the route of major floodways, and the impact on the operation of the waterway system.

Implementation

Further strategic work

- Identify land that is at risk from land-slip and investigate the application of an appropriate environmental overlay.
- Identify land that is at risk from salinity and investigate the application of an appropriate environmental overlay.

Reference documents

Land Capability Study of the Cardinia Shire, 1997

Salinity - Land Capability Study 2004 (Cardinia Shire)

Planning Decision Support Framework for Salinity, 2005 (Cardinia Shire)

Domestic Wastewater Management Plan, 2007 (Cardinia Shire)

Cardinia Shire Integrated Water Management Plan 2015-2025, September 2015

Cardinia Shire Waste and Resource Recovery Strategy 2017-2026, December 2017

Cardinia Shire Sustainable Environment Policy 2018-2028, June 2018

Yarra Valley Future Water: Water Plan 2013/14 to 2017/18, October 2012

South East Water: 2013-2018 Water Plan

Port Phillip & Western Port Regional Catchment Strategy - www.ppwrcc.vic.gov.au,

Summary of the Regional Catchment Strategy for the Port Phillip & Western Port region, August 2015

State Environment Protection Policy (Waters), October 2018

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Landscape

Overview

The diverse landscapes within the Cardinia Shire are one of the municipality's strongest attributes. Five areas within the Cardinia Shire have been recognised as significant landscapes by the National Trust. These are the Western Port Coast, Heath Hill, Cockatoo Creek, Puffing Billy Corridor and Menzies Creek Valley.

Key issues

- Protecting significant landscapes, including the protection of the specific features of each landscape.
- Recognising that the landscape is an important element in the sustainable development of tourism in the municipality.
- Acknowledging that ridgelines are particularly vulnerable to inappropriate development.
- Recognising the pressures to develop land in locations of high scenic value.

Objective

To recognise and protect the diverse landscape and areas of significant landscape value.

Strategies

Landscape values

- Protect significant landscapes recognised by the National Trust including the Western Port Coast, Heath Hill, Cockatoo Creek and Menzies Creek Valley from development that is inconsistent with the landscape values and built form of the surrounds.
- Protect the scenic corridor of the Puffing Billy Tourist Railway from extensive native vegetation removal and development that is inconsistent with the landscape values of the existing corridor.
- Recognise the value of the landscape to the community and as a competitive strength for the sustained development of tourism in the municipality.
- Ensure that development in the urban growth area does not intrude or adversely impact on the landscape values of the area north of the Princes Highway and maintains significant vistas.
- Recognise the landscape values associated with rural land including areas south of the Princes Highway.
- Recognise the contribution of drains and bridges to the character of the rural landscape.
- Protect exotic vegetation if it is of heritage, cultural or economic value, or contributes to the character of an area.
- Minimise the fragmentation of land and removal of vegetation in areas of high landscape value.

Design and built form

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- Require the use of building materials and colours which are in context with the surrounding environment in areas of landscape significance and in rural residential and rural living areas.
- Ensure the sensitive siting of buildings and other structures having regard to the protection of prominent ridgelines, significant views and areas of remnant vegetation.

Implementation

Application of zones and overlays

- Applying a Significant Landscape Overlay to protect the significant landscapes of the Koo Wee Rup Swamp area recognised by the National Trust and progressively over other identified significant landscapes and ridgelines.
- Applying an Environmental Significance Overlay over the northern hills area and other sites of significance to protect landscape and environmental values.
- Applying a Vegetation Protection Overlay to hills areas where vegetation is a significant factor in the landscape character.

Further strategic work

- Identify significant landscapes of the Koo Wee Rup Swamp area other than those recognised by the National Trust.
- Development of a policy for replacement planting ratios for the removal of vegetation in an Environmental Significance Overlay, Significant Landscape Overlay and Vegetation Protection Overlay.
- Prepare local policies to address the siting and design of horticultural structures, and the siting and design of large sheds in rural areas, and investigate whether a single policy can address both issues.
- Undertake a cultural landscape assessment of the Cardinia Western Port Green Wedge to consider the cultural landscape significance of the former Dalmore and Koo Wee Rup swamp environs and the Western Port coastline, including consideration of Indigenous history, the drainage of the swamp, former railway lines and the Soldier Settlement period.

Reference documents

Cardinia Shire Sustainable Environment Policy 2018-2028, June 2018

Puffing Billy Corridor Landscape Evaluation Study (1992)

Guidelines for Slope Management in Subdivisions (December 2017)

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Biodiversity

Overview

Cardinia Shire contains a diverse environment with a wide range of native flora and fauna habitats. The municipality is known to contain State and Nationally significant rare and threatened species including the Southern Brown Bandicoot, Growling Grass Frog, Swamp Skink, Masked Owl, Helmeted Honeyeater, Powerful Owl, Emerald Star Bush, Matted Flax-Lily and indigenous grasslands, dwarf galaxias and Australian grayling.

The decline and fragmentation of habitats resulting in the loss of biodiversity is a key issue. Over 75% of the native vegetation in Cardinia Shire has been cleared leaving those areas of remnant vegetation of particular significance and value in terms of maintaining biodiversity within the Municipality.

Cardinia Shire forms part of the UNESCO Mornington Peninsula and Westernport Biosphere Reserve, protection of this biosphere relies on good environmental management of the catchment of which Cardinia shire is a key part.

Key issues

- Recognising that native vegetation provides habitat for key fauna species and provides for diverse flora species throughout the municipality.
- Maintaining biodiversity especially in areas of significance.
- Maintaining and re-establishing wildlife corridors.
- Recognising that soil erosion occurs on steep land where there are dispersible soils and in areas prone to landslips as a result of native vegetation removal.
- Controlling the spread and extent of pest plants and animal within the municipality.

Objective 1

To achieve no net loss in the quantity and quality of native vegetation in the municipality.

Strategies

Encourage the retention and re-establishment of native vegetation to protect areas of habitat and landscape value, minimise erosion, reduce sediment entering waterways and Western Port, reduce the potential for flooding on the Koo Wee Rup Swamp, and to reduce the potential for salinity.

- Protect areas of significant remnant vegetation (particularly endangered and vulnerable Ecological Vegetation Classes) as shown on the mapped Ecological Vegetation Classes provided by the Department of Environment, Land, Water and Planning.
- Ensure that the siting of buildings and works avoids and minimises the removal or fragmentation of native vegetation, especially in areas of biodiversity significance, and where appropriate, building envelopes should be approved as part of subdivision plans to minimise the removal of vegetation.
- Require the replanting of indigenous vegetation where earthworks have been undertaken, particularly on steeply sloping land, on land subject to erosion, or in close proximity to a watercourse to manage and reduce sediment generation

Objective 2

To maintain and enhance the diversity of indigenous habitats and species.

Strategies

Areas of biodiversity significance

- Avoid the fragmentation of land in areas of biodiversity significance and create new habitat corridors/biolinks.
- Encourage or, if appropriate, require landowners to undertake steps to conserve and enhance sites of biodiversity significance through a Conservation Covenant, or agreements under Section 173 of the Planning and Environment Act 1987.
- Protect and enhance biodiversity within natural waterways and man-made drains and dams through subdivision design, development design and appropriate management.
- Protect and enhance the environmental and landscape values of the land including habitat of botanical and zoological significance.
- Ensure the identification, protection and linking of important biodiversity areas within the growth area through Precinct Structure Plans including the provision of Native Vegetation Precinct Plans and Biodiversity Management Plans where required.

Threatened species

- Protect and enhance the habitat of threatened flora and fauna species, including the growling grass frog and southern brown bandicoot.

Objective 3

To reduce the spread and extent of pest plants and animals.

Strategies

- Encourage land management practices which control and remove noxious and environmental weeds.

Implementation

Application of zones and overlays

- Applying a Rural Conservation Zone or a Public Conservation and Resource Zone in areas of high biodiversity value.

Further strategic work

- Developing Native Vegetation Precinct Structure Plans and Biodiversity Management Plans in the Urban Growth Area.
- Identifying and mapping areas of endangered flora and fauna such as Growling Grass Frog and Southern Brown Bandicoot for inclusion in the Environmental Significance Overlay or Vegetation Protection Overlay.

Reference documents

Pest Plant Management Strategy 2012-2017

*Targeted Survey and Conservation Management Plan for the Growling Grass Frog *Litoria reniformis*: Pakenham Urban Growth Corridor, Ecology Partners, 2006*

Southern Brown Bandicoot Strategic Management Plan for the former Koo Wee Rup Swamp Area, Ecology Australia, 2009

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Bushfire management

Overview

Areas within the Cardinia Shire, particularly north of the Princes Highway, are prone to bushfires due to the topography and vegetation cover. During the Ash Wednesday fires of 1983, there was a significant loss of life and property in the Upper Beaconsfield and Cockatoo areas.

Bushfire risk is the product of a number of factors including fuel levels, slope, climatic conditions, population and the degree of preparation of individual property owners to cope with a fire. Other factors such as the accessibility of land to fire fighting vehicles and the availability of water will affect the risk levels for individual properties.

Key issues

- Recognising that climate change will increase the risk from bushfires.
- Prioritising human life over all other policy considerations.
- Directing new development to low risk locations.
- Where new development is permitted in high risk areas, safe access is provided.
- Ensuring that any further strategic work has regard to the significant bushfire risk faced by many parts of the Shire, including the development of township strategies and structure plans.
- Ensuring that any development in bushfire risk areas can implement bushfire protection without unacceptable biodiversity impacts.

Objective

To recognise that areas in the municipality are prone to bushfire and to minimise the potential risk to life, property and the environment.

Strategies

Subdivision

- Ensure that the siting and design of subdivisions has fully considered the impact of existing slope, aspect and vegetation in terms of risks of bushfire, particularly with regard to the location of building envelopes.

Siting and design

- Ensure that the siting and design of houses and other accommodation in high risk bushfire areas minimises the potential risk of loss of life or property from wildfire, particularly in terms of the existing slope, aspect and vegetation.
- Ensure all development has appropriately designed access for emergency vehicles.
- Ensure development provides adequate access to water.
- Encourage the use of roads as a buffer between housing and bushland.

Fuel reduction

- Encourage the use of controlled burning to reduce ground fuel levels and to help maintain healthy and diverse forests and woodlands consistent with the Ecological Vegetation Class (EVC).
- Support the implementation of the *Cardinia Municipal Fire Prevention Plan, 2016* and *Cardinia Municipal Wildfire Preparedness Plan 2005*.

Reference documents

Cardinia Municipal Fire Prevention Plan, 2016

Cardinia Municipal Wildfire Preparedness Plan, 2005

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Open space

Overview

Cardinia Shire has a significant amount of regional open space, including Aura Vale Lake Park at Cardinia Reservoir, Gembrook Regional Park, Bunyip State Park, and Emerald Lake Park. In addition, regional parklands are proposed along the Cardinia Creek for the protection of the environmental values of the corridor and the provision of a regional passive recreation resource in recognition of the projected population growth in the Casey-Cardinia Growth Area.

There are also other significant waterways and streams throughout the Municipality that provide passive open space linkages. The *Pedestrian and Bicycle Strategy, August 2017* identifies primary, secondary and township path and trails network providing and improving access to key community and recreation facilities.

Key issues

- Providing open space to produce an attractive urban environment with a clear sense of place and identity and building a cohesive community.
- Providing active, passive and environmental open space, including varied play spaces, within the Urban Established Areas, Urban Growth Area, and townships to meet the needs of current and future communities and to protect environmental values.

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- Developing open space linkages.
- Providing off road tracks and trails for walking and cycling.
- Developing and maintaining appropriate infrastructure for recreational horse riding.
- Providing for greater connectivity and amenity that encourages physical activity (including walking and cycling) throughout the Shire.

Objective 1

- To ensure that land is provided and developed for a range of open space functions to meet community needs for active and passive open space (including linkages) and for the protection of the environment.

Strategies

Open space contributions

- Ensure adequate active and passive open space is provided for communities and ensure that this is not constrained by environmental, drainage or other constraints.
- A minimum public open space contribution of 8% of the land to be subdivided must be provided as part of the subdivision of land for urban residential purposes.
- An 8% public open space contribution shall comprise land unencumbered by other constraints (eg: land required by Melbourne Water for drainage purposes, land within service easements) to allow its full use for recreation purposes.
- Any encumbered public open space should be provided in addition to the 8% public open space contribution for recreation purposes.

Location and design

- Balance the recreational, environmental and bushfire management objectives of open space reserves.
- Recognise the importance of open space in contributing to an attractive urban environment with a clear sense of place and identity.
- Co-locate community and recreational facilities and encourage joint management of these facilities.
- Provide play spaces within open space in accordance with *Cardinia Shire Play Space Strategy, 2014*.
- Discourage the fragmentation of open space within new developments and subdivisions.
- Ensure that the design of open space is functional having regard to its intended use, minimises maintenance and ensures community and personal safety.
- Support the ongoing development of recreation reserves in the rural townships in the municipality as an important focus of recreational activities for the community.
- Support the progressive development of the Cardinia Creek Regional Parklands as a regional passive recreation resource and for the protection of the creek environs as outlined in the *Cardinia Creek Parklands Future Direction Plan, 2002*.
- Recognise open space of high environmental value (e.g. Chambers Reserve, Mt Cannibal, and creek reserves) and ensure that the management of such open space protects and enhances the environmental values of the land.
- Develop open space corridors along major waterways which can be used for passive open space to improve water quality and act as wildlife corridors.
- Develop and maintain a network of off-road pedestrian, bicycle and equestrian trails within the municipality.

Objective 2

To provide open space which allows people to choose to be active in an environment that is convenient safe and pleasant.

Strategies

- Ensure the location of open space is planned to allow residents to maximise opportunities to undertake physical activity.
- Ensure that open space is well connected to encourage physical activity.

Implementation

Application of zones and overlays

- Applying the Infrastructure Contributions Overlay (ICO), or Development Contributions Plan Overlay (DCPO), as appropriate, in areas within the Urban Growth Area and the Urban Established Area, to fund the acquisition and development of district open space and linear open space along major waterways.

Further strategic work

- Develop a policy for the provisions of open space in commercial and industrial areas for inclusion in the schedule to Clause 53.01 seeking a contribution rate of 2%.
- Finalise the draft Developer Landscape Guidelines and implement appropriate planning policy.

Reference documents

Equestrian Strategy (2014)

Cardinia Creek Parkland Future Direction Plan, Parks Victoria, 2002

Recreation Open Space Strategy 2000

Cardinia Growth Corridor Sports Strategy (2005)

Any listed at Clause 11.04 (Open space) of the State Planning Policy Framework

Healthy by Design (January 2017)

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Post-contact heritage

Overview

The rich and diverse cultural heritage of Cardinia Shire illustrates the historic use, development and occupation of the land. This history is demonstrated by a wide range of heritage places that include buildings and structures, monuments, trees, landscapes and archaeological sites. These places give Cardinia a sense of historic continuity as well as demonstrating the economic, social and political circumstances of the time.

Key issues

- Protecting recognised sites and precincts of heritage significance with State, Regional and Local Significance.
- Defining the extent of heritage places to be included in a Heritage Overlay.
- Recognising and protecting significant trees.

Objective

To provide for the protection and appropriate management of sites of heritage significance.

Strategies

- Protect sites of State, regional and local heritage significance.
- Promote the conservation of sites of local heritage interest.
- Encourage and support the reuse of existing heritage places for appropriate land uses, including, where appropriate, prohibited uses if that use will assist in the preservation of the heritage site
- Give consideration to the heritage context of sites which adjoin sites of heritage significance.
- Recognise the significance of heritage buildings and sites in contributing to the character of townships within the municipality.
- Recognise and protect the cultural significance of war memorials and avenues of honour in the municipality.
- Recognise and protect the cultural significance of the Western Port Green Wedge, particularly the significance of the former Dalmore and Koo Wee Rup swamp environs and the Western Port coastline.

Implementation

Further strategic work

- Investigate development and implementation of a Heritage Policy to assist with assessment of proposals for heritage properties and adjoining properties that addresses a range of issues including subdivision, demolition, redevelopment and urban design.

Reference documents

Cardinia Shire (North) Heritage Study – Volume 1 Heritage Program (1996)

Cardinia Shire (North) Heritage Study – Volume 2 Environmental History (1996)

Cardinia Shire (North) Heritage Study – Volume 3 Heritage Places (1996)

Cardinia Shire (Emerald & Cranbourne Districts) Heritage Study – Volume 1 Environmental History (1998)

Cardinia Shire (Emerald & Cranbourne Districts) Heritage Study – Volume 2 Heritage Places (1998)

Cardinia Local Heritage Study Review – Volume 1: Executive Summary (May 2013) (Sept 2015)

Cardinia Local Heritage Study Review – Volume 2: Key Findings & Recommendations (May 2013) (Sept 2015)

Cardinia Local Heritage Study Review – Volume 3: Heritage Place and Precinct Citations - Revised September 2017

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Heritage Significance (2013)

Old Emerald Bakehouse – 1 Kilvington Drive (rear), Emerald (December 2012)

Cardinia Shire Council Significant Tree Study (May 2009)

Significant Trees - Statement of Significance (John Patrick Landscape Architects, October 2022)

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C250card**Aboriginal cultural heritage****Overview**

The Cardinia Shire Council acknowledges that the municipality contains Aboriginal heritage sites and places of cultural significance, some of which have been identified and formally recorded but many which have not. All Aboriginal heritage sites, whether formally registered or not, are protected under the *Aboriginal Heritage Act 2006*. Aboriginal heritage sites and places are highly valued by traditional and contemporary Aboriginal groups and should also be valued by the broader Australian community. The Cardinia Shire Council seeks to promote best heritage practices by ensuring heritage sites and places are preserved for current and future generations.

Key issue

- Identifying and protecting sites of significant Aboriginal heritage.

Objective

To provide for the protection and management of significant Aboriginal heritage sites, material culture, and places of historical and spiritual significance to relevant contemporary Aboriginal people.

Strategies**Consultation**

- Work in partnership with Registered Aboriginal Party/s and any other relevant stakeholders to manage and protect indigenous cultural heritage values
- Develop a process of consultation with Registered Aboriginal Party/s which will allow them to have input into development decisions at a strategic planning level.

Conservation sites

- Use public open space or linked corridors of public open space, within and between development areas, where possible, to conserve Aboriginal heritage sites, taking into account and balancing other community and environmental needs.

Reference documents

Shire of Cardinia Urban Growth Corridor Aboriginal Heritage Study (2004)

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C250card**Resource conservation**

Conserving, reducing and effectively managing the resources we use are essential to achieving ecological sustainable development. The use of fossil fuels, particularly in electricity generation and transport has been the major source of greenhouse gas emissions resulting in climate change. The community needs to respond to climate change through strategies to reduce greenhouse gas emissions and the implementation of adaptation strategies to reduce vulnerability to projected future impacts of climate change. Three key areas for reducing the impact on the environment within the municipality are air, water and general waste.

Key issues

- Minimising greenhouse gas emissions and developing greenhouse adaptation strategies.
- Reducing water consumption and improving water quality.
- Reducing waste generation and minimising waste going to land fill.
- Recognising the need to reduce and divert food waste from landfill and reuse water to grow food.

Objective

To develop and promote more environmentally sustainable ways of living and working, including greenhouse gas emission reductions.

Strategies

General

- Support the implementation of key regional activities identified through Western Port Greenhouse Alliance to reduce greenhouse gas emissions.

Reduction of greenhouse gas emissions

- Encourage developments that are based around public transport and alternative forms of transport including walking and cycling.
- Promote sustainable communities through appropriate urban design that encourages alternate forms of transport to reduce energy consumption.

Reduction in water consumption

- Ensure water sensitive urban design principles for all developments and subdivisions including the use of the third pipe recycled water systems and the use of water tanks where appropriate.
- Encourage the use of recycled or alternative water in the construction of roads in all subdivision and in other works and ongoing maintenance activities, where this water is available.

Design and construction

- Encourage the use of environmentally sustainable construction materials and techniques.
- Encourage development that incorporates sustainable building design including design that promotes the health and well being of occupants.
- Encourage the inclusion of, or provision for, sustainable technology in the design of new buildings.
- Provide and preserve landscaping that enhances amenity and maintains ecosystems.

Implementation

Further strategic work

- The development of local sustainable buildings guidelines.

Reference documents

Sustainable Development and Greenhouse Reduction Strategy – Cardinia Local Action Plan 2006

Sustainable Water Use Plan (2006)

Cardinia Shire Council Stormwater Management Plan (2002)