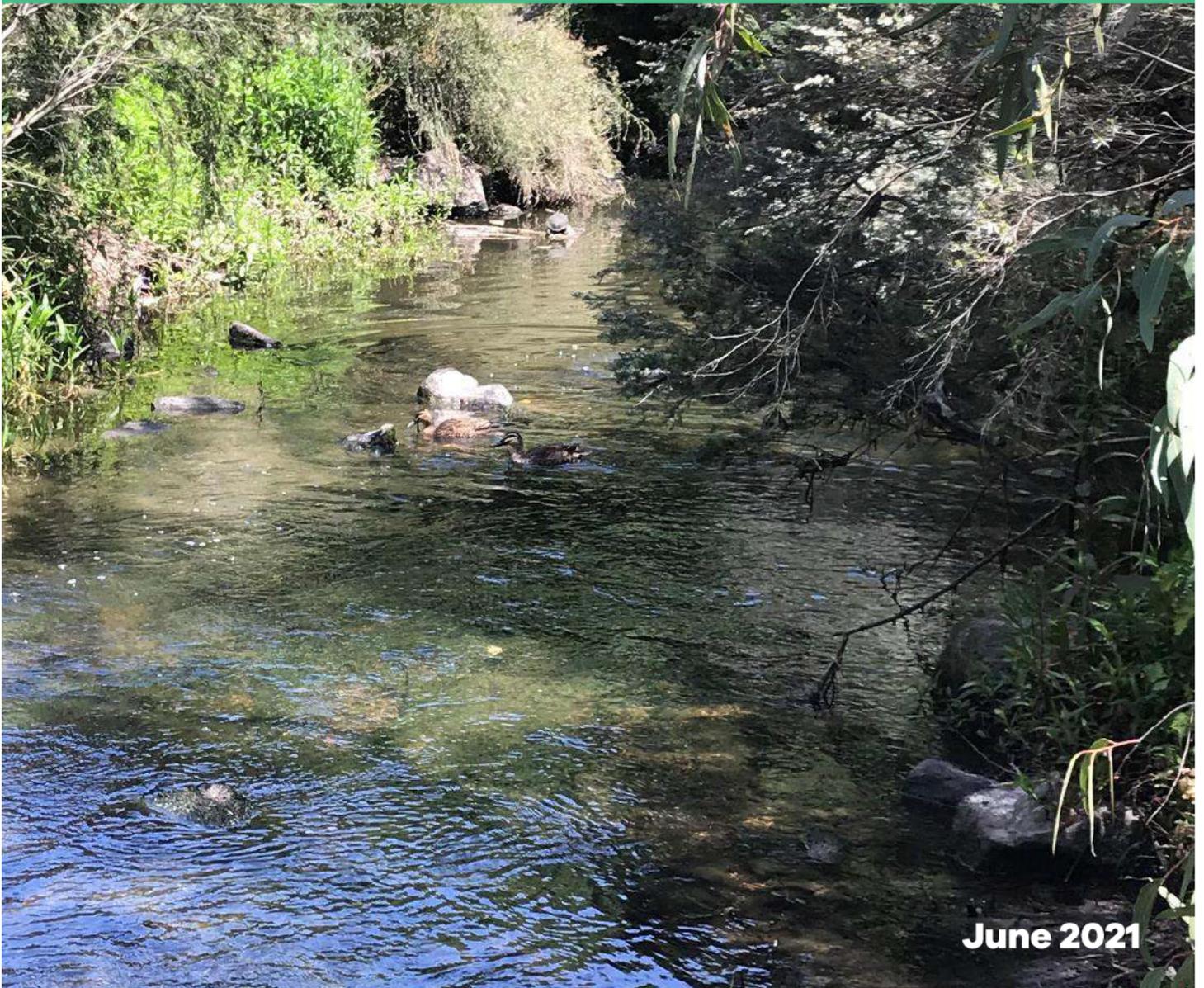




Moreland
City Council

Between the Merri and the Moonee Ponds

**Reviewing the Environmental
Significance Overlay along waterways
in the Moreland Planning Scheme**



June 2021

Moreland is a City bounded by two creeks: The Moonee Ponds Creek to the west and the Merri Creek to the east. These waterways are markedly different in character and habitat value but are currently affected by Environmental Significance Overlays which bear a striking resemblance to one another. Some tributaries of each Creek are also protected within the Planning Scheme, and others are omitted.

The purpose of this document is to review the Environmental Significance Overlay within the Moreland Planning Scheme as it relates to the waterways and recommend a way forward for the protection of sites of environmental significance along them.

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Executive summary

Why conduct a review?

Moreland's waterways are of significance to both its traditional and current inhabitants as well as visitors to our municipality. This significance has been reinforced by increased usage and appreciation of the parkland associated with them during the COVID-19 pandemic. Areas around the waterways include vegetation that is of state and national significance. This includes vegetation communities that are threatened in their own right, and which are habitat for a variety of critically endangered, endangered and vulnerable wildlife.

The areas surrounding the Merri, Edgars, Merlynston and Moonee Ponds Creeks and the Melville Main Drain have been protected by an Environmental Significance Overlay in the Moreland Planning Scheme since May 2000. Planning Scheme reviews conducted in 2010 and 2018 have identified a need to review the controls, which have remained largely unchanged for more than twenty years.

This report reviews the performance of the Overlay and identifies areas of significance which are not covered by it, with a particular focus on Moreland's waterways.

How the review was undertaken

The review incorporated an analysis of:

- Legislation, policies and strategies relating to waterways and the environment with a focus on waterways in Moreland as shown on Figure 1 below;
- The relevant planning scheme overlays available within the Victorian Planning Provisions;
- Planning applications lodged within the Environmental Significance Overlay between 2010 and 2019;
- Building permit applications lodged for the same area in this timeframe; and
- Inspections of the waterways and their surrounds.

As well as discussions with the Merri Creek Management Committee and Melbourne Water in relation to the operation of the control.

Key findings

The review finds that there are areas of significant vegetation within Moreland which warrant protection, but these areas have been subject to ongoing vegetation loss. The Environmental Significance Overlay (ESO) is the most appropriate tool available within the Victoria Planning Provisions for protecting vegetation. However, the current ESO provisions in the Moreland Planning Scheme are not appropriately worded or applied and as a result the potential of privately owned land to contribute to improvements in the significance of the area and the wildlife corridors they represent has not been realised to date.

A revised Environmental Significance Overlay can ensure that new development along the waterways increases habitat for native wildlife, providing benefit to both Moreland's threatened species and users of parkland along the waterways.

The Overlay should be applied to areas along the Westbreen Creek and Campbellfield Creek, with mapping also adjusted along waterways that are currently protected.

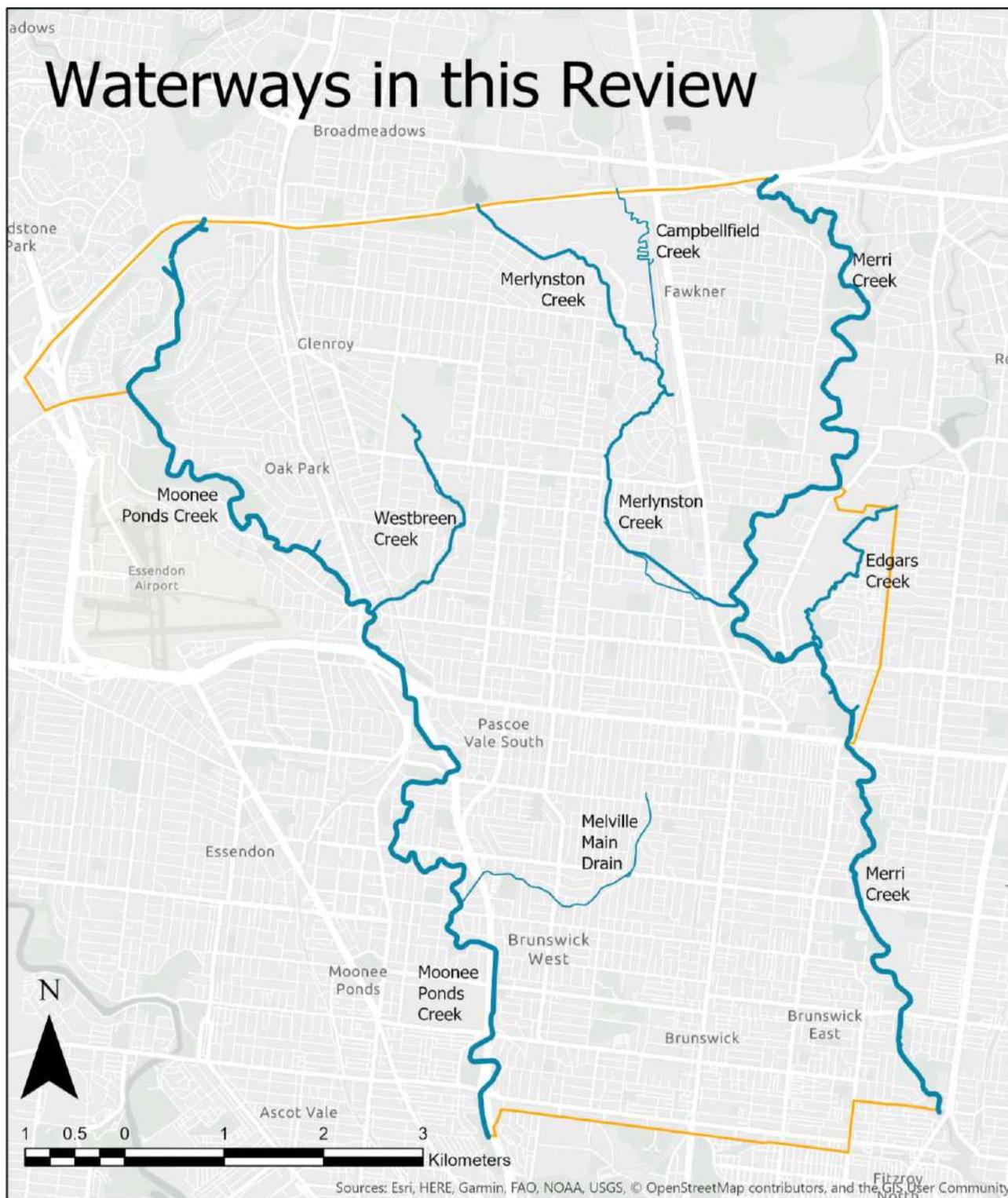
Key actions

Key actions arising from this review are:

- Provide training and associated resources to assist Council's Urban Planners in assessing applications in the Environmental Significance Overlay.
- Conduct a planning scheme amendment to update the text and extent of the current overlays and apply an Environmental Significance Overlay to the Westbreen and Campbellfield Creeks.

The training of Urban Planning staff should be commenced immediately, however any planning scheme amendment may be deferred until completion of the MOSS review in 2022.

Figure 1: Waterways in this Review



The changing fortunes of Moreland's Creeks

The importance of Moreland's creeks has long been recognised by its original inhabitants: they would have once provided a range of foods, including freshwater mussels, eels and the Myrrnong or daisy yam, for the East Kulin people.

European settlers did not all share this recognition. Following colonisation land along the waterways was initially used for farming and quarrying. Later, noxious industries located close to waterways, which were often effectively utilised as sewers. The benefits of waterways from a human and habitat perspective was largely overlooked. Attitudes shifted in the 1980s; groups like the Friends of Merri Creek and Friends of the Moonee Ponds Creek were formed, and revegetation programs commenced.

The need to respond appropriately to the creek environs was recognised in the planning scheme before the formation of the City of Moreland, with the planning schemes of Broadmeadows, Brunswick and Coburg including requirements for a planning permit for the construction of buildings and works within 30 metres of any bank of the Moonee Ponds Creek or Merri Creek and 15 metres of the bank of the Merlynston Creek and two tributaries of the Moonee Ponds Creek.

The route to more specific controls over the Creeks was lengthy. Whilst temporary protection was afforded in 1990, this expired in 1994. It was not until the gazettal of the new format Moreland Planning Scheme on 4 May 2000 that permanent controls were imposed in the form of the Environmental Significance Overlay Schedules 1 and 2.

During the intervening period much has changed along the Creeks and their tributaries, with both continued urbanisation and the implementation of significant revegetation works.

Figure 2: Vegetation and development over time



Studies have revealed additional areas of environmental significance (including some areas where this significance is as a result of revegetation works) along Moreland's waterways, not all of which are protected by the Environmental Significance Overlay.

Legislation has also changed, and whilst the Environmental Significance Overlays were ahead of their time in including reference to the need to consider sites of Indigenous cultural heritage, the Aboriginal Heritage Act 2006 and the associated Aboriginal Heritage Regulations 2018 have now standardised this requirement across the whole of Victoria.

Whilst much has changed for and along Moreland's Waterways in the 21 years since the Environmental Significance Overlays were introduced, the Overlays themselves have not. Planning Scheme reviews conducted in 2010 and 2018 have identified the need to revisit the controls.

Key issues, inputs and limitations

Key issues

The key issues explored in this review are:

Does Moreland have land along its waterways that is of environmental significance?	Are the current Environmental Significance Overlays effective in protecting and enhancing these areas?	How could the Planning Scheme be amended to improve environmental outcomes?
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This report deals with the key issues under the following headings:

- The imperative to protect habitat;
- The 'state of the environment' within Moreland;
- Reviewing the Environmental Significance Overlays in the Moreland Planning Scheme; and
- Parameters for revising the Environmental Significance Overlays.

Inputs

In order to address the key issues, the review considered relevant legislation, research, and policies and strategies at a National/International; State/Regional; and local level, along with case studies at a regional and local level.

Legislation	
National	Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act)
State and Regional	Flora and Fauna Guarantee Act 1988
Policies and Strategies	
International	United Nations Convention on Biological Diversity in 1992
National	Australia's Strategy for Nature 2019-2030
State and Regional	Development Guidelines for the Merri Creek, Merri Creek and Environs Strategy Steering Committee, 1999 Edgars Creek Conservation and Development Plan: Edwardes Lake to Merri Creek Healthy Waterways Strategy, Melbourne Water, 2013 Healthy Waterways Strategy, Melbourne Water, 2018 Land Capability Assessment of Moonee Ponds Creek, Ian Sergeant, 1991 Linking People and Spaces, Parks Victoria, 2002 Merri Creek and Environs Strategy, Merri Creek Management Committee Incorporated, August 1999 Merri Creek and Environs Strategy 2009-2014, Merri Creek Management Committee Incorporated, May 2009 MMBW 1991 Moonee Ponds Creek Concept Plan map & annotated photos Moonee Ponds and Merri Creek Resting Places Strategy, Moreland City Council, 2002

Policies and Strategies	
	<p>Moonee Ponds Creek – Hope Street to Dawson Street, West Brunswick Landscape Concept Plan Moonee Ponds Creek Chain of Ponds Implementation Plan</p> <p>Moonee Ponds Creek Chain of Ponds Plan</p> <p>Moonee Ponds Creek Concept Plan, Melbourne Water, 1992</p> <p>Moonee Ponds Creek Corridor Revegetation Guidelines: Revegetating the Moonee Ponds Creek corridor, Chenoweth, D. 2000</p> <p>Moonee Ponds Creek Issues and Opportunities Assessment, Echelon Planning, 2019</p> <p>Moonee Ponds Creek Landscape Revival Strategy, Chris Dance Land Design, 1997</p> <p>Moonee Ponds Creek Northern Zone Concept Plan, Edge Pty Ltd, 1998</p> <p>Moonee Ponds Creek Strategic Plan</p> <p>Port Phillip and Westernport Regional Catchment Management Strategy Protecting the Waterways of the West Ministerial Advisory Committee</p> <p>Protecting the Waterways of the West: Discussion Paper, State of Victoria Department of Environment, Land, Water and Planning, 2019</p> <p>Protecting Victoria’s Environment - Biodiversity 2037, The State of Victoria Department of Environment, Land, Water and Planning, 2017</p> <p>Understanding Planning Issues along the Merri Creek and Policy: Development Guidelines for the Merri Creek, Merri Creek Management Committee Incorporated, May 2004</p> <p>Urban Stormwater: Best Practice Environmental Guidelines for Urban Stormwater, prepared by CSIRO for Victoria, Stormwater Committee, 1999</p>
Local	<p>Brunswick Terminal Station Incorporated Document, 2012</p> <p>Council Plan, Moreland City Council</p> <p>Disability Access and Inclusion Plan 2016-2020, Moreland City Council</p> <p>Moreland City Council Reconciliation Action Plan 2014, Moreland City Council</p> <p>Moreland Nature Plan 2020, Moreland City Council</p> <p>Moreland Open Space Strategy 2012-2022, Moreland City Council</p> <p>Moreland Planning Scheme</p> <p>Moreland Urban Forest Strategy, Moreland City Council</p> <p>Moreland Watermap 2014-2020, Moreland City Council</p> <p>Sport and Physical Activity Strategy 2014-2018, Moreland City Council</p> <p>Street Landscape Strategy 2012-2022, Moreland City Council</p> <p>Urban Forest Strategy 2017-2027, Moreland City Council</p> <p>Urban Heat Island Effect Action Plan 2016, Moreland City Council</p> <p>Westbreen Creek Conservation and Development Plan, Moreland City Council, 2019</p>

Research and Case Studies	
National and International	Protected Matters Search Tool The Extinction Crisis in Australia's Cities and Towns, Australian Conservation Foundation, 2020
State and Regional	Advisory list of environmental weeds in Victoria, M. White, D. Cheal, G.W. Carr, R. Adair, K. Blood and D. Meagher, Department of Environment Land Water and Planning, April 2018 Assessing the Effectiveness of Local Government Planning Scheme Controls in Protecting Native Vegetation in the Port Phillip & Western Port Region, Parson Brinkerhoff Australia Pty Ltd, 2009 Catchment Condition Report, PPWCMA 2017-18 The Flora and Fauna of Moonee Ponds Creek, Dale Tonkinson and David Lloyd of Go Green, 1991 The History and Heritage of Moonee Ponds Creek, Fiona Weaver, 1991 Visual Assessment and Recreation Resources and Opportunities of Moonee Ponds Creek, Scenic Spectrums Pty Ltd, 1991
Local	Moreland Indigenous Vegetation Assessment, Faithfull, T and Bainbridge, B, Merri Creek Management Committee, 2011 Review of planning permit applications lodged on land affected by the ESOs 1 January 2010 to 31 December 2019 Review of building permit applications lodged on land affected by the ESOs 1 January 2010 to 31 December 2019

Limitations

The environmental significance of Moreland's waterways and their environs rests not only on the significance of the vegetation surrounding them, but also on the quality of the Creek water itself and the life that it supports. Planning Scheme Overlays are able to control the construction of buildings and works on the land, but not the velocity or level of pollution in water discharged into the Creeks by existing development either within Moreland or upstream of it. These matters are the remit of the Environment Protection Authority, Melbourne Water, and Council in its role as drainage authority. In making observations about the effectiveness or otherwise of the Environmental Significance Overlay this report will consider the impact of buildings and works, rather than potential pollution of Creek water associated with the use of land.

The imperative to protect biodiversity: Legislative and Strategic Inputs

A desire to retain and protect indigenous flora and fauna is, of course, not restricted to Moreland. The imperative to do so is apparent at all levels of government, as well as the United Nations. At the international level, Australia is a signatory to the United Nations Convention on Biological Diversity, while the Environment Protection and Biodiversity Conservation Act 1999 and the Flora and Fauna Guarantee Act 1988 provide legislative imperatives to protect biodiversity at the national and state level respectively. At a regional level, the Port Phillip and Westernport Regional Catchment Management Strategy and the Healthy Waterways Strategy 2018 provide more targeted objectives and actions which are relevant in the Moreland context.

National and international context

The Moreland Nature Plan 2020¹ provides a useful summary of the existing international, national, state and regional policies and strategies which relate to biodiversity and provide context for it:

United Nations Convention on Biological Diversity in 1992

Australia is one of 150 governments that signed up to the United Nations Convention on Biological Diversity in 1992. The Convention is dedicated to promoting sustainable development and recognizes that biological diversity is about more than plants, animals and micro-organisms and their ecosystems – it is about people and our need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment in which to live.

Under the Convention, governments undertake to conserve and sustainably use biodiversity and are required to develop national biodiversity strategies and action plans, and to integrate these into broader national plans for environment and development.

For Australia, this has led to the development of environmental legislation, the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) and the Strategy for Nature 2019-2030 discussed below.

Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act)

Australian Government's central piece of environmental legislation and provides a framework for the protection of biodiversity. It identifies species of national significance which includes communities and species that exist within Moreland such as Temperate Grasslands of the Volcanic Plains and legislates their protection.

Australia's Strategy for Nature 2019-2030

Overarching framework for all national, state and territory and local strategies, legislation, policies and actions that target nature. It includes three priority goals:

- Connect all Australians with nature
 - Care for nature in all its diversity
 - Share and build knowledge
- which all strongly align with the focus areas in the Moreland Nature Plan.

State and Regional context

The legislative obligation to conserve biodiversity at a State level comes from the Flora and Fauna Guarantee Act 1988, the objectives of which include:

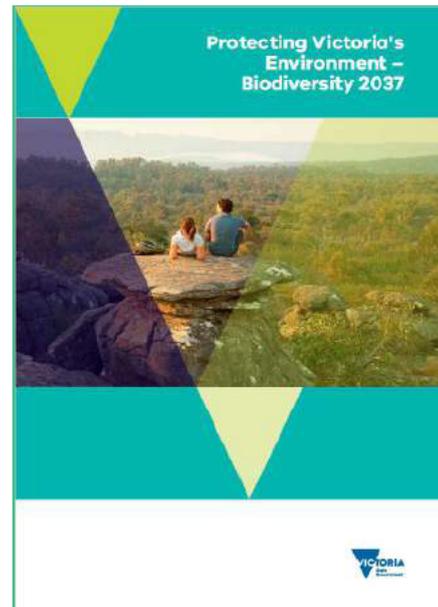
- (a) to guarantee that all taxa of Victoria's flora and fauna, other than taxa specified in the Excluded List, can persist and improve in the wild and retain their capacity to adapt to environmental change; and

¹ Moreland City Council Nature Plan, Moreland City Council, 2020, p.51

- (b) to prevent taxa and communities of flora and fauna from becoming threatened and to recover threatened taxa and communities so their conservation status improves; and
- (c) to protect, conserve, restore and enhance biodiversity, including—
 - (i) flora and fauna and their habitats; and
 - (ii) genetic diversity; and
 - (iii) ecological communities; and
 - (iv) ecological processes; and...
- (f) to identify and conserve areas of Victoria in respect of which critical habitat determinations are made.

- Its potential to help reduce the impacts of climate change;
- Being an important part of our identity; and
- Its right to exist.²

Council is required to consider the objectives of the Flora and Fauna Guarantee Act 1988 when performing any functions that may reasonably be expected to impact on biodiversity in Victoria.



The Catchment and Land Protection Act 1994, under which the Port Phillip and Westernport Catchment Management Authority was established, includes objectives to establish a management framework which will “maintain and enhance long-term land productivity while also conserving the environment” and “aim to ensure that the quality of the State's land and water resources and their associated plant and animal life are maintained and enhanced”.

Protecting Victoria's Environment - Biodiversity 2037

In Protecting Victoria's Environment – Biodiversity 2037 the Victorian State Government identifies the importance of the environment and biodiversity in terms of:

- The life-sustaining services it provides;
- Increasing the resilience of key sectors of the economy, including being our biggest tourist attraction;
- Being fundamental to the cultural practices of Traditional Owners and Indigenous Victorians and to the health and wellbeing of every Victorian;

The Vision of the document is that “Victoria's biodiversity is healthy, valued and actively cared for”, with a commitment to achieving an overall 'net gain' in biodiversity. The twin goals for achieving the vision are that Victorians “understand that their personal wellbeing and the economic wellbeing of the state are dependent on the health of the natural environment”; and that “Victoria has functioning plant and animal populations, improved habitats and resilient ecosystems, even under climate change.”

Healthy Waterways Strategy 2018

The 2018 Melbourne Water Healthy Waterways Strategy, and the 2013 Strategy which preceded it have a single regional 50-year vision for the Port Phillip and Westernport region:

Healthy and valued waterways are integrated with the broader landscape, and enhance life and liveability. Waterways connect diverse and thriving communities of plants and animals; provide amenity to urban and rural areas, and engage communities with their environment; and are managed sustainably to enhance environmental, economic, social and cultural values.

² Protecting Victoria's Environment - Biodiversity 2037, The State of Victoria Department of Environment, Land, Water and Planning, 2017, pages 5 and 6.

The Strategy divides the region into five river catchments, with a vision, goals and actions for each catchment. It is the clear intent of the document that it will need to be incorporated into the strategic planning of many government and non-government organisations and

... should be a key input to the development and implementation of such planning documents as:

- the Port Phillip and Westernport Regional Catchment Strategy
- the Victorian Waterway Management Strategy
- Plan Melbourne
- local government land-use and environmental plans, precinct structure plans and planning scheme amendments
- water corporations water and wastewater management plans
- regional water extraction planning.³

The imperative for the Strategy to be implemented through the planning scheme stems from the fact that “changes in land use and development have the potential to adversely affect waterway health, and the social and environmental values of waterways”⁴.



The document identifies that the waterways have environmental, social, cultural and economic importance, with goals for the Yarra River catchment, which includes the Merri Creek, being:

- The environmental values and significant ecological processes of all of the Yarra Catchment waterways are protected and improved.
- Riparian and instream habitats provide landscape connectivity, allowing the movement of native species and promoting resilient native flora and fauna populations.
- Cultural and heritage values are recognised, protected, maintained and enhanced.
- Communities and individuals connect with and appreciate the values of waterways. Waterway corridors are used appropriately for places of solitude, enjoyment of nature, and active and passive recreation that support mental and physical wellbeing.
- An engaged and knowledgeable community in the Yarra catchment acts to protect and promote sustained waterway values. Our waterways are a place of continuous learning.
- The waterways of the Yarra Catchment support natural system maintenance, potable and agricultural water supply, commerce and tourism in a balanced and environmentally sustainable manner.
- The Yarra waterways are managed in a transparent and collaborative governance framework that allows for strategic, innovative and integrated ways to protect waterways across public and private land.
- The cultural, historical, amenity values and landscape settings of all modified waterways are protected and improved.⁵

(emphasis added)

³ Melbourne Water, Healthy Waterways Strategy, 2018, page 158.

⁴ Melbourne Water, Healthy Waterways Strategy, 2018, page 158.

⁵ Melbourne Water, Healthy Waterways Strategy, 2018, page 113.

The Strategy highlights that the “Moonee Ponds Creek catchment is one of Melbourne’s most urbanised and modified creek systems. Historically the creek was seen solely as a drain or water conduit, a perception that led to inappropriate development, neglect and degradation.”⁶ The vision for the Maribyrnong River catchment, of which the Moonee Ponds Creek is part, is for

*A Maribyrnong catchment whose ecological health has significantly improved since 2018. It is accessible, used and valued by the community. Its collaborative management reflects the contributions of Traditional Owners and the broader community.*⁷

Goals for the catchment are:

Environmental: Management is helping create a preferred future for the Maribyrnong’s environments by assisting species and habitats to change, adapt, move or be replaced as the catchment and climate change. The Maribyrnong River and its tributaries are important bio-links – corridors of secure, high quality habitats that allow plants and animals to move and adapt to changes in catchment conditions and climate. Water quality and flows provide for healthy and diverse populations of plants and animals. Stormwater is managed to enhance rather than destroy waterway health.

Social: Waterways across the Maribyrnong are places that provide continuous, connected and accessible open spaces for public enjoyment and recreation.

Education: Public authorities, community groups and hundreds of individuals across the catchment share their knowledge of the Maribyrnong and take regular action to help pursue this strategy’s goals. Education programs are resourced and coordinated across many organisations that are working or involved within the catchment.

Decision-making and action: Long-term monitoring supports adaptive management by tracking progress towards this strategy’s goals. Urban planning decisions make explicit reference to their potential impacts on waterway environments. Victorian Planning Schemes include overlays to protect the river, its tributaries, floodplains and escarpments. Effects of planning decisions are monitored to support evaluation and learning. Melbourne Water is seen by all parties to the Strategy as a successful facilitator, enabler, coordinator and leader.⁸

(emphasis added)

In both instances, the goals that have been emphasised can be assisted by a well-framed planning Overlay.

Port Phillip and Westernport Regional Catchment Management Strategy

The objectives of the Port Phillip and Westernport Regional Catchment Management Strategy include:

- To retain high quality native vegetation in the region providing habitat for native species and making significant contributions to the overall environmental health and resilience of the region.
- To achieve benefits for biodiversity and land management while capturing and storing carbon in the landscape.
- To maintain the diversity of native animal species that still inhabit the region and ensure the populations are healthy and resilient.
- To maintain and enhance the environmental values of waterways as indicated by the health and resilience of fish, frogs, platypus, birds, macroinvertebrates, vegetation and amenity.⁹

⁶ Melbourne Water, Healthy Waterways Strategy, 2018, page 154.

⁷ Melbourne Water, Healthy Waterways Strategy, 2018, page 8.

⁸ Melbourne Water, Healthy Waterways Strategy, 2018, page 100.

⁹ Port Phillip and Westernport Catchment Management Authority 2021, Victorian State Government, accessed 17 May 2021, <<https://www.ppwracs.vic.gov.au/about/summary-of-objectives-priorities-management-measures/>>

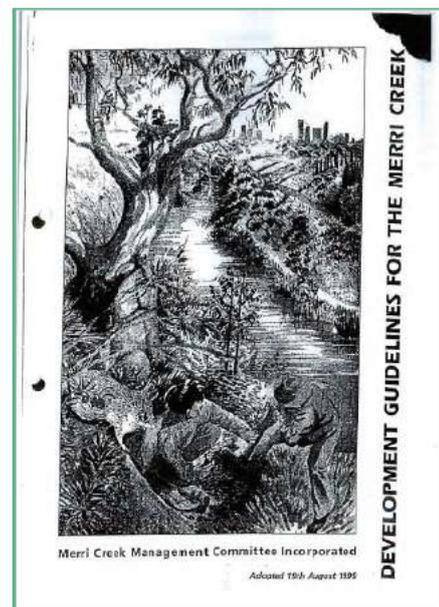
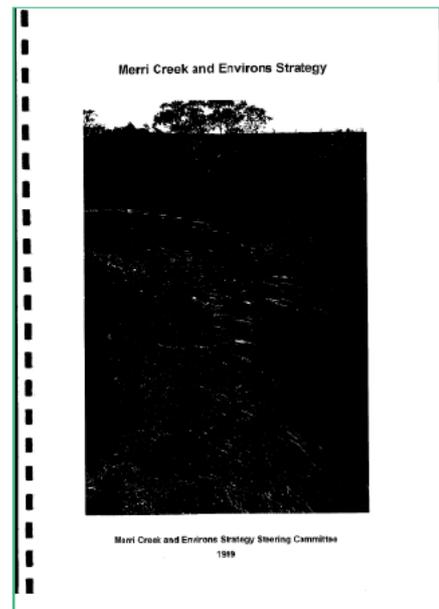
Priorities which support these objectives include to:

- Permanently maintain the extent of large and/or important patches of native vegetation and ensure they are managed primarily for conservation purposes whilst also retaining the collective quantity or quality of the other native vegetation across the landscape.
- Ensure that major revegetation programs are focussed on areas that offer opportunities for major new 'Nature Links' to improve habitat extent, connectivity and resilience.
- Stabilise and improve the health of populations of species that are threatened with extinction and stabilise or improve the health of populations of a set of 'indicator species'. The indicator species will be considered a reflection of other native species that share their landscapes and threats.
- Protect and improve riparian vegetation crucial to the environmental and social values of waterways.
- Maintain and, where possible, improve the diversity and populations of native species in the region's waterways, wetlands and estuaries.
- Improve water quality in waterways, wetlands and estuaries and protect the water quality of Port Phillip Bay, as a receiver of water.
- Protect and improve the features of waterways enjoyed for their aesthetic, landscape and cultural values and for active and passive recreation.

It is considered that the provisions of planning policy and Clause 52.17 alone are inadequate to meet these objectives, and that additional protection in the form of an Overlay is required to meet them.

Merri Creek Environs Strategies

The Merri Creek and Environs Strategy 1999 formed the basis of the introduction of the ESO1, and the 1999 Development Guidelines for the Merri Creek are to be considered in assessing an application under the Overlay. The updated 2004 decision guideline document is listed as a background document in the Schedule to Clause 72.08 of the Moreland Planning Scheme. A revised Merri Creek and Environs Strategy 2009-2014 was published in 2009.



The Strategies provide an overview of the important issues along the corridors of the Merri and its tributaries, objectives to be met, and an action program for the Councils and public authorities with responsibility for the Creek. The objectives of both documents refer to the importance of the Creek corridor for habitat, human recreation, and its natural and cultural features. The difference between the two is that the 2009 document clearly applies the objectives to the streams flowing into the Merri Creek. Council resolved on 8 April 2009 to endorse what was at the time the Merri Creek & Environs Strategy (2008-2013) in principle and include it within both the Moreland Planning Scheme and the Moreland Open Space Strategy as a reference document. Whilst the latter occurred the former did not.

The associated Merri Creek Guidelines provide practical objectives, criteria and techniques for developing and assessing redevelopment proposals close to the Creek and its tributaries. These documents remain relevant today, although the form and age of the 1999 document, with electronic copies of a generally poor quality and scanned without text recognition, means that it is not readily accessible to a broad audience. The front cover images above are indicative of this.

The Edgars Creek Conservation and Development Plan: Edwardes Lake to Merri Creek provides some additional guidance for land along this tributary.

Moonee Ponds Creek Concept Plans and Strategies

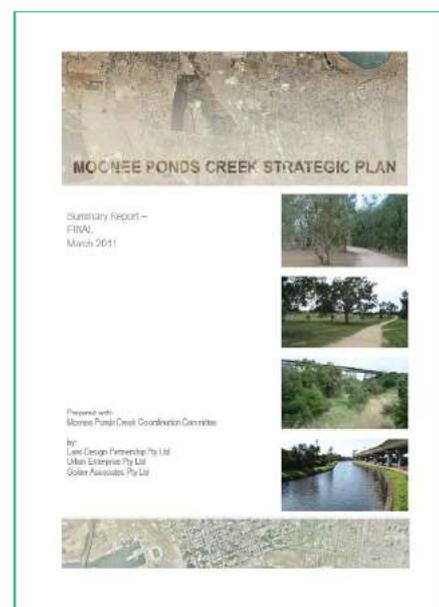
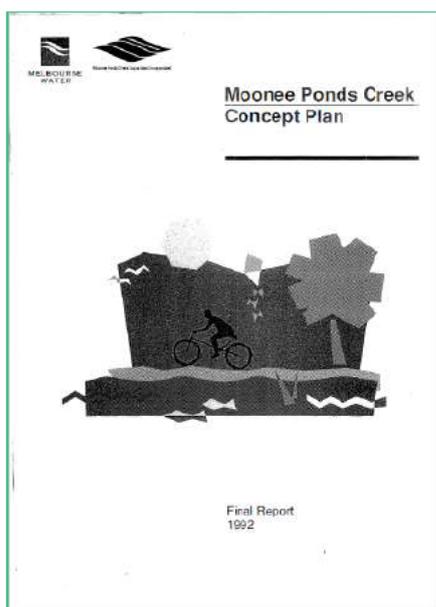
The Moonee Ponds Creek Concept Plan 1992 and the Moonee Ponds Creek Landscape Revival Strategy 1997 provide a vision and objectives for the Creek, along with guidance for works on public land. However, they include little assistance for the development or assessment of proposals on private land.

More recent documents include the Moonee Ponds Creek Strategic Plan 2011 and the Moonee Ponds Creek Chain of Ponds Plan 2018 and its associated Implementation Plan, are not referred to in the Overlay.

The 2011 Strategy contains details of issues, opportunities and implementation strategies which apply to both public and private land. The document was endorsed in principle by Council on 14 September 2011 and has the potential to be relevant from a planning perspective, although Council has not adopted the actions contained within it.

The Chain of Ponds Plan is primarily focussed on public land, although it includes reference to planning controls generally, plus more extensive reference to stormwater techniques for the broader area which would benefit the Creek. Actions detailed in the Implementation Plan include:

- Reviewing mechanisms to strengthen the protection and enhancement of vegetation on public and private land, including options to strengthen planning controls such as the scope of environmental overlays.
- Investigating strategic land acquisition opportunities to improve access, connectivity to support a minimum connected 100m wide open space corridor along the creek to support regular maintenance, emergency and pedestrian access.
- Reviewing planning controls to ensure development complements and protects the creek corridor, including resolving zoning anomalies of Council properties within the open space corridor and introducing design guidelines;
- Advocating to State Government to work with adjoining Councils to introduce consistent planning controls along the creek corridor. *This has been acted upon, and it is understood that a consistent scenic control may be proposed.*



- Encouraging adjoining private land owners to restrict weed species and plant and protect indigenous species that contribute to the corridor, especially in constrained areas of the corridor.
- Implementing a range of stormwater treatment tools within the catchment including wetlands and water sensitive design treatments to treat stormwater before entering the creek.
- Increasing permeable surfaces within private and public landholdings.
- Protect the creek environs from the encroachment of urban development.¹⁰

Protecting the Waterways of the West Ministerial Advisory Committee

The Ministerial Advisory Committee on Protecting the Waterways of the West was established in 2018. Its 2019 discussion paper emphasises the custodianship of the waterways by the First Nations people and highlights the unique landscape of the Waterways, which include the Moonee Ponds Creek. The paper indicates that the urban stretches of the Waterways generally have low environmental values, but that the community values the natural environment, including wildlife and native vegetation associated with the waterways more highly than the recreation function that these spaces also perform. The community's vision for the waterways and their desires for change along them also emphasise the environment.

Key directions for the Waterways of the West identified in the discussion paper are:

- Embedding Traditional Owners and their values and culture in waterway planning and management;
- Protecting water quality and water health;
- Providing water for the environment and Country;
- Enhancing and activating waterways as open space;
- Connecting, celebrating and valuing the landscape;
- Improving the resilience of coastal wetlands and estuaries; and

- Integrating land and water planning and management.

It is anticipated that an action plan, arising from analysis of feedback received on the Discussion Paper, will be released by the State Government in 2021. It is noted the actions identified may impact upon implementation of the review of Moreland's Environmental Significance Overlay along the Moonee Ponds Creek.

Local Context

Moreland Urban Forest Strategy

Council recognises that:

Climate change is likely to amplify existing threats [to biodiversity] such as habitat loss and invasive species, making their impacts considerably worse... The most susceptible species will be those with restricted or specialised habitat requirements, poor dispersal abilities or small populations.

Urban consolidation, loss of backyards (which often provide good habitat linkages for fauna in particular) and incremental loss of vegetation to infrastructure make it difficult to maintain biodiversity. As Moreland's population continues to grow and the climate warms, it will become increasingly important to provide refuge and connectivity of habitat for biodiversity.¹¹

Whilst the focus of the Strategy is upon street trees, it notes the importance of establishing a native under storey and mid storey in private gardens, parks and waterways in order to strengthen biodiversity, and that:

Vegetation maintenance and future plantings along the creeks and within the bounds of these overlays should focus on strengthening and protecting the environmental significance through selecting indigenous species of local provenance within parks and streetscapes.¹²

¹⁰ Moonee Ponds Creek Chain of Ponds Implementation Plan 2018 - 2028

¹¹ Moreland Urban Forest Strategy 2017-2027, Moreland City Council, 2017, page 57.

¹² Moreland Urban Forest Strategy 2017-2027, Moreland City Council, 2017, page 72.

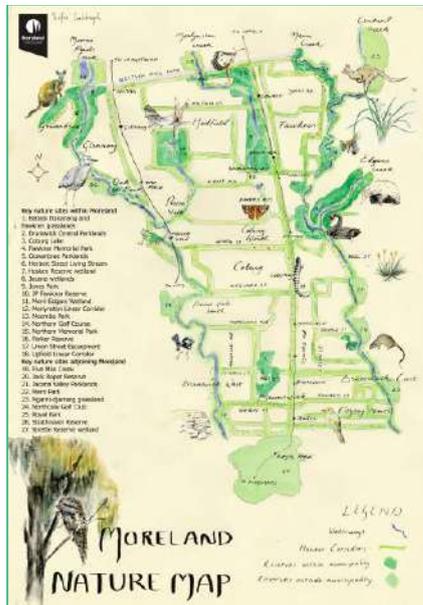
Moreland Nature Plan

The Moreland Nature Plan was adopted by Council on 12 August 2020, and includes as its vision that:

The City of Moreland will support a more diverse, connected and resilient natural environment where native birds and animals thrive. Our residents will value the local environment and appreciate opportunities to explore and connect with nature in the City.

The plan identifies 18 key sites within Moreland and nine adjoining the municipality, which are depicted on the Moreland Nature Map reproduced in Figure 3.

Figure 3: Moreland Nature Map¹³



Urban Heat Island Effect Action Plan

Council’s Urban Heat Island Effect Action Plan (UHIEAP) identifies that Moreland experiences significant urban heat island effect due the concentration of human activity and the extent of dense, dark and solid surfaces that absorb heat that it supports. Thermal imaging of the municipality indicates a clear lowering of surface heat in the vicinity of the Merri Creek, with the Moonee Ponds Creek providing significantly less benefit.

The UHIEAP identifies that amongst the impacts of the urban heat island effect are a vulnerability of vegetation due to water and heat stress, with the associated impact on native animals. This can be

counteracted by activities such as increasing vegetation cover and use of water sensitive urban design. Key environmental benefits of taking action to reduce the Urban Heat Island Effect include more resilient urban ecosystems which provide a healthier, cooler habitat for animals.

Moreland Planning Scheme

Protection of the environment is also enshrined into planning law, with the purpose of the Planning and Environment Act 1987 being to “establish a framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians” (emphasis added). Within established areas of Melbourne this ‘protection’ of land, and therefore the environment, is sought through the application of various controls on clearing native vegetation.

Much of the land immediately adjacent to the waterways is in public ownership or management, with Council and State Government policies arguably sufficient to ensure the ongoing protection of these areas. However it is recognised that the provision of native and indigenous vegetation, reduced use of weed species, and sensitive siting of development over a broader area have a number of benefits for both the environment and our community’s enjoyment of it.

Whilst objectives and strategies that refer to the need for sensitive design adjacent to landscapes that have environmental, scenic or open space significance are able to be implemented where a planning permit is required, there are a number of forms of development (including vegetation removal, other works, and construction of some buildings) which do not require planning approval under the zone provisions. Implementation of the MIVA and related policies through application of a suitable Overlay to protect sites that it identifies as being significant is appropriate, whilst a methodical application of an Overlay along the Creek valleys is necessary to give full expression to the following Objectives and Strategies of the Scheme:

¹³ Moreland Nature Plan, page 9

Clause 12.01-1S

Strategies to “assist the protection and conservation of Victoria’s biodiversity” include:

- Using “biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites”;
- Assisting “the identification, protection and management of important areas of biodiversity”;
- Assisting “the establishment, protection and re-establishment of links between important areas of biodiversity, including through a network of green spaces and large-scale native vegetation corridor projects.”

Clause 12.03-1S

Strategies to “protect and enhance river corridors, waterways, lakes and wetlands” include:

- Protecting “the environmental, cultural and landscape values of all water bodies and wetlands”;
- Ensuring that “development responds to and respects the significant environmental, conservation, cultural, aesthetic, open space, recreation and tourism assets of water bodies and wetlands”;
- Ensuring that “development is sensitively designed and sited to maintain and enhance environmental assets, significant views and landscapes along river corridors and waterways and adjacent to lakes and wetlands”.

Clause 12.05-1S

Strategies to “protect and conserve environmentally sensitive areas” include protecting environmentally sensitive areas with significant recreational value (specifically noted as including the Merri Creek) from development that would diminish their environmental conservation or recreational values.

Clause 12.05-2S

Strategies to “protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments”, include:

- Ensuring “development does not detract from the natural qualities of significant landscape areas” and “important natural features are protected and enhanced”;

- Recognizing “the natural landscape for its aesthetic value and as a fully functioning system”; and
- Seeking to improve “the landscape qualities, open space linkages and environmental performance in significant landscapes and open spaces”.

Clause 14.02-1S

Clause 14.02-1S, in seeking to “assist the protection and restoration of catchments, water bodies, ground water, and the marine environment” outlines that vegetated buffer zones at least 30m wide should be provided on each side of waterways to

- Maintain the natural drainage function, stream habitat and wildlife corridors and landscape values,
- Minimise erosion of stream banks and verges, and
- Reduce polluted surface runoff from adjacent land uses.

Clause 19.02-6S

Strategies to “establish, manage and improve a diverse and integrated network of public open space that meets the needs of the community” include ensuring that open space networks:

- “Ensure that land use and development adjoining regional open space networks, national parks and conservation reserves complements the open space in terms of visual and noise impacts, preservation of vegetation and treatment of waste water to reduce turbidity and pollution”;
- “Ensure public access is not prevented by developments along stream banks and foreshores”.

Clause 19.02-6R

To “strengthen the integrated metropolitan open space network” planning should ensure major open space corridors are protected and enhanced. This will include protection of water’s edge parklands from “intrusion and encroachment of development that impacts on open space and their natural landscape setting”.

Clause 19.02-6L

Local strategies relating to open space that also have direct implication for built form include ensuring that development is designed to preserve or enhance public access to open space.

Clause 53.18

The provisions of Clause 53.18 acknowledge the role that stormwater can play, both positively and negatively, in the environment and in human enjoyment of spaces, and require Council to assess these when considering an application for buildings and works or subdivision. They also include requirements for appropriate site management during construction.

Clause 02.03-2

In the local context, Clause 02.03-2 outlines that:

Council seeks to improve and protect its environmental and landscape values by:

- *Creating a diverse urban forest of trees and other vegetation that will enhance urban ecology and greening in both the public and private realm.*
- *Protecting and enhancing habitat corridors in parks and along waterways.*
- *Protecting the ecological integrity of the Merri, Moonee Ponds, Edgars, Westbreen and Merlynston Creek corridors and remaining areas of remnant vegetation areas.*
- *Encouraging development to be sensitive to all river and creek interfaces.*

State policies which seek to maintain biodiversity are supported by a local objective to increase tree canopy cover and enhance the ecological values of the city by designing and siting developments to protect and enhance areas of remnant vegetation and indigenous revegetation as identified on Strategic Framework Plan: Open Space.¹⁴

¹⁴ Clause 12.01-01L

The state of Moreland's environment

Moreland has been the subject of ongoing urbanisation for nearly 200 years. Whilst this has resulted in a transformation of much of the landscape, remnants of indigenous vegetation remain. Their scarcity, and the scarcity of some vegetation community types within Melbourne, Victoria, and Australia as a whole, makes those remnants more precious.

The existing Environmental Significance Overlays around the Merri, Moonee Ponds and Edgars Creeks are underpinned by studies of the significance of these areas which were conducted in the early 1990s. More recent studies indicate ongoing significance, as well as additional areas where remnant vegetation remains.

Notwithstanding these studies and the value placed upon our waterways by the public, ongoing net vegetation loss has continued. This vegetation loss is not unique to Moreland. The State Government's Biodiversity 2037 highlights that

Victoria is the most intensively settled and cleared state in Australia, with over 50 per cent of the state's native vegetation cleared since European settlement. More recently, climate change has brought new and challenging threats to biodiversity.

As Victorians have become more conscious of the importance of biodiversity – and more active in their efforts to protect it – the rate of native vegetation clearing has slowed. Yet, despite these efforts, many native plant and animal species remain under threat. Victoria's biodiversity continues to decline, and the current level of remedial effort is not sufficient to make up for these losses.¹⁵

Whilst it is a common perception that urban areas like Moreland are essentially human environments, in fact cities provide critical habitat for large numbers of threatened species. The Australian Conservation Foundation reports that:

25% of all nationally listed threatened plants and 46% of nationally listed threatened animals can be found in Australia's 99 cities and towns [with a population of 10,000 or more]. Cities have a disproportionately high number of threatened species and are home to, on average, three times as many threatened species per hectare as rural environments. While many of these species also have habitat outside cities and towns, for 39 threatened species, these urban areas are the last remaining places in which they exist.¹⁶

Council has actively sought to improve the environmental significance of land under its management, and the Moreland Indigenous Vegetation Assessment 2011 (MIVA) provides the most recent investigation of the significance of both remnant vegetation and revegetation works conducted. What it shows is that there have been gains in vegetation cover in some areas in recent decades, and some revegetation works are now considered to be of national significance¹⁷. The majority of revegetation sites are located on public land along Moreland's waterways, with the MIVA identifying 192 such sites. However, there has also been significant areas of vegetation clearance. This has included the clearing of vegetation previously considered to be of national importance and is perhaps most apparent in comparing the 1989 and 2020 aerial photographs of the now-suburb of Gowanbrae, and the Northern Memorial Park extension, two areas previously considered to be of national vegetation importance:

¹⁵ Protecting Victoria's Environment - Biodiversity 2037, The State of Victoria Department of Environment, Land, Water and Planning, 2017, page 4

¹⁶ The extinction crisis in Australia's cities and towns, Australian Conservation Foundation, page 7

¹⁷ Moreland Indigenous Vegetation Assessment Final Report, Tony Faithfull and Brian Bainbridge, 2011, page 1.

Figure 4: Vegetation loss in Gowanbrae and Fawkner



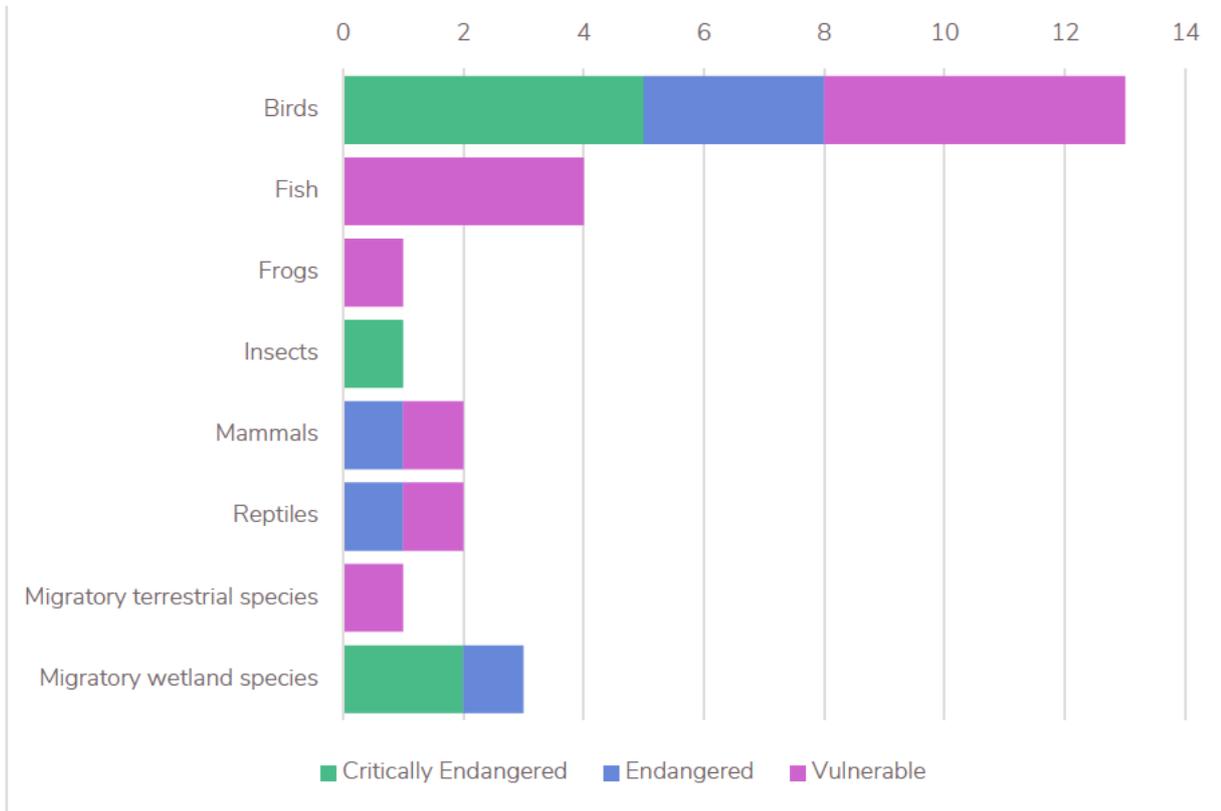
Fauna

The Federal Department of Agriculture, Water and the Environment's Protected Matters Search Tool provides information on whether matters of national environmental significance or other matters protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EBC Act) are likely to occur in an area. Whilst the information is indicative only, and local knowledge and information should also be sought where possible, it identifies 27 listed fauna species which may, are likely to, or are known to occur in Moreland. Of these, eight are critically endangered, six endangered, and 13 vulnerable, with a variety of species types represented, as depicted in Figure 5.

Listed species which are known to be located within Moreland, or whose habitat is known to be located in Moreland are:

- Australasian Bittern
- Australian Painted Snipe
- Black-eared Cuckoo
- Black-faced Monarch
- Golden Sun Moth
- Great Egret, White Egret
- Growling Grass Frog
- Murray Cod
- Painted Snipe
- Regent Honeyeater
- Satin Flycatcher
- Swift Parrot
- White-bellied Sea-Eagle
- White-throated Needletail

Figure 5: Status of fauna protected by the Environment Protection and Biodiversity Act 1999 within Moreland



Flora

Ecological Vegetation Classes

The MIVA examines the significance of indigenous vegetation within the City of Moreland. A total of 351 patches of remnant vegetation and 192 revegetation sites were assessed. The Assessment found that:

- Sixteen different Ecological Vegetation Classes (EVCs) were recorded as either occurring as remnants or as expected to have occurred in Moreland. Twelve of these are considered to be endangered at the bioregional level, and three extinct.
- Only four out of eleven (or 36%) EVCs listed by the then Department of Sustainability and Environment (now DELWP) as occurring in Moreland in 1750 are represented to at least 10% of their pre-1750 extent. Two of these ecological vegetation classes (Plains Grassy Woodland and Plains Grassland) correspond roughly to plant communities listed as Nationally threatened.

- Revegetation plots covered an area of 79 hectares. Most of this vegetation was on public land along waterways or within the Northern Golf Course.
- Weed invasion was the biggest threat to the ongoing significance of remaining areas.

The Assessment utilised published significance criteria in identifying sites of national, state and lower significance based upon the presence of specific plant species or communities, as detailed in Table 1.

Table 1: Significance of vegetation areas

Significance level	No. of remnant patches	No. of revegetation plots
National	52	16
State	80	76
Regional	115	24
Local	47	1

In assessing change over time, the MIVA notes that:

- 24 of the 330 vegetation patches assessed by a 1998 study were found to have been destroyed and two more were fragmented, however eleven new patches discovered;
- Eleven plant species appeared to become extinct in the wild in Moreland between 1998 and 2011; and
- A 17% reduction in remnant vegetation (from 170 hectares to 141 hectares) had occurred between 1998 and 2011, with much of the residual being moderately to severely degraded;

Significant plant species

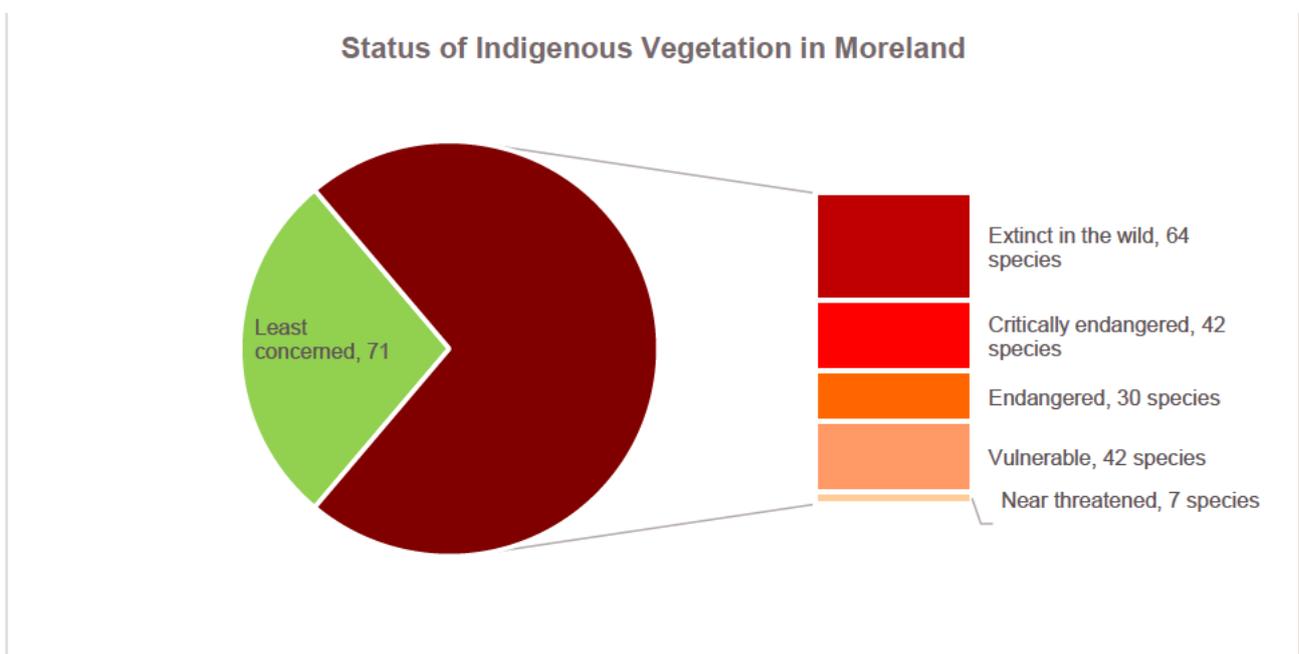
Plant species recorded during the assessment included 255 indigenous species and 381 exotic species, of which 351 were recorded as occurring as weeds. However the Assessment found Moreland is home to a number of species of regional or higher significance, as detailed in Table 2.

At a Moreland scale, 64 (or 25%) of the indigenous species recorded appeared to be extinct in the wild in Moreland, of which eleven appeared to have become extinct in the wild in Moreland since the 1998 survey. The majority of the remainder are considered to be at some threat locally, as depicted in Figure 6 below.

Table 2: Species significance

Significance level	No. of species	Comment
National	2	Species identified are the Matted Flax-lily and Swamp Everlasting. Moreland maintains a significant part of the remaining population of Matted Flax-lily, mainly along Merri Creek in Fawkner. Swamp Everlasting is only known from planted individuals.
State	12	
Regional	141	
Local	47	
Weeds	351	Eight species are identified as the highest priority for control, with another 39 of high priority.

Figure 6: Status of recorded indigenous vegetation



Sites of significance

The MIVA identifies 21 key sites where vegetation of national, state or local significance has been either maintained or reintroduced through revegetation works. These sites are important not only for the vegetation they contain, but for the habitat that they provide for native fauna. The identified precincts are ranked in order of significance, but notably all are within proximity of waterways.

Table 3: Key sites of significance and their level of planning scheme protection

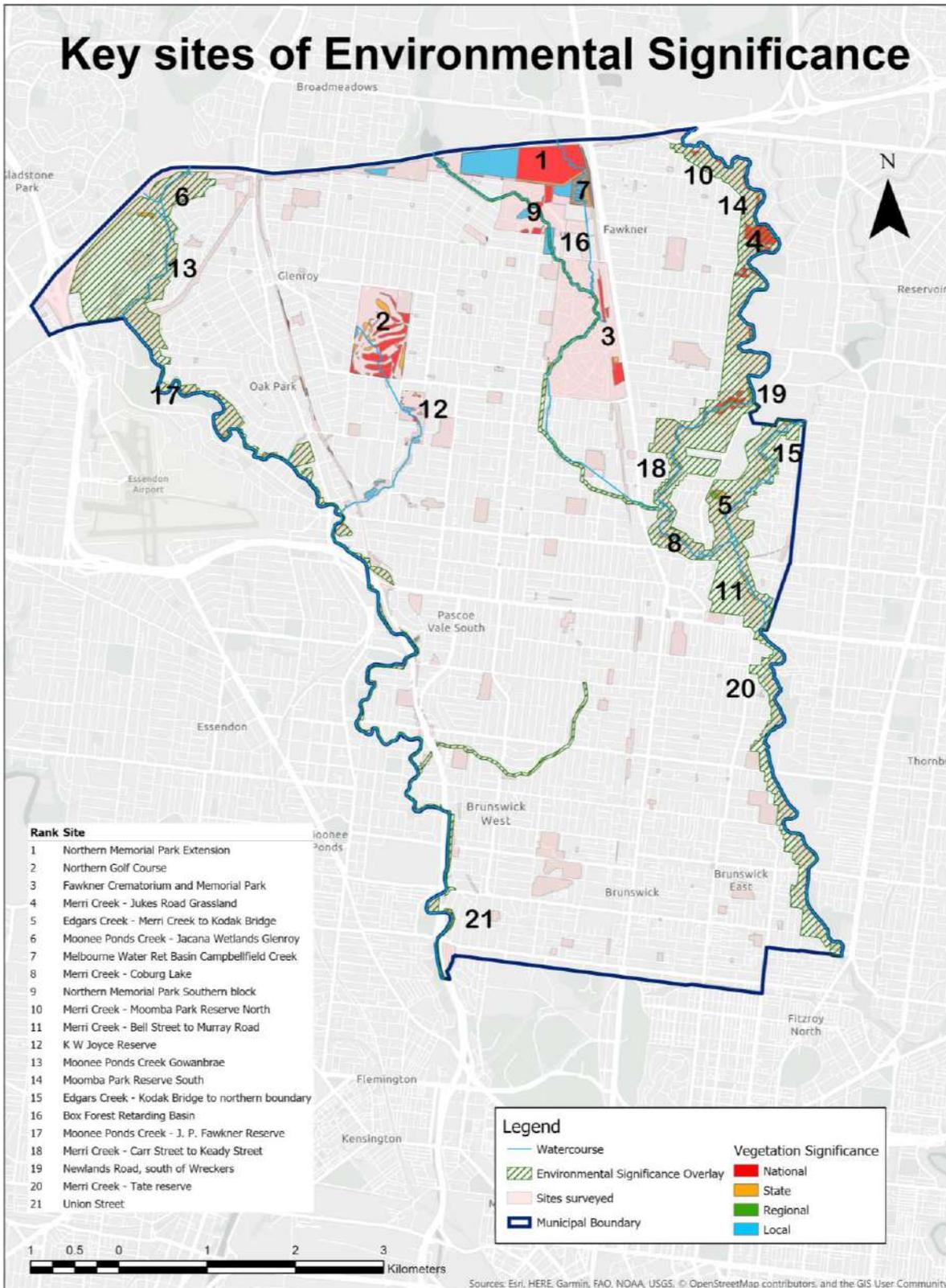
Site	Associated waterway	Current ESO protection?
Northern memorial park extension (site 358)	Campbellfield Creek, Merlynston Creek	No
Northern Golf Course (site 400)	Westbreen Creek	No
Fawkner Crematorium and Memorial Park (site 409)	Merlynston Creek, Upfield Railway line	Partial
Merri Creek Grassland, Jukes Road Fawkner (site 402)	Merri Creek	Yes
Edgars Creek Merri Creek to Kodak Bridge (site 412)	Merri Creek, Edgars Creek	Yes
Moonee Ponds Creek – Jacana Wetlands Glenroy (site 327)	Moonee Ponds Creek	Yes
Melbourne Water Retarding Basin Campbellfield Creek (site 167)	Campbellfield Creek	No
Merri Creek – Coburg Lake (site 259)	Merri Creek	Yes
Northern Memorial Park Southern Block (site 415)	Merlynston Creek	Partial
Merri Creek – Moomba Park Reserve North (site 319)	Merri Creek	Yes
Merri Creek Bell Street to Murray Road (site 361)	Merri Creek	Yes
K. W. Joyce Reserve (site 180) ¹⁸	Westbreen Creek	No
Moonee Ponds Creek Gowanbrae (site 157)	Moonee Ponds Creek	Yes
Moomba Park Reserve South (site 230)	Merri Creek	Yes
Edgars Creek Kodak Bridge to northern boundary (site 413)	Merri Creek, Edgars Creek	Yes
Box Forest Retarding Basin (site 169)	Merlynston Creek	Partial
Moonee Ponds Creek – JP Fawkner Reserve (site 141)	Moonee Ponds Creek	Yes
Merri Creek – Carr Street to Keady Street (site 376)	Merri Creek	Yes
Newlands Road, south of Wreckers (site 313)	Merri Creek	Yes
Merri Creek – Tate Reserve (site 216)	Merri Creek	Yes
Moonee Ponds Creek Escarpment Union Street, West Brunswick (site 174)	Moonee Ponds Creek	Yes

¹⁸ The MIVA incorrectly refers to this reserve as Austin Crescent Reserve, however mapping indicates that the K. W. Joyce Reserve is intended.

These findings would indicate that, in addition to reviewing the functionality of the ESO controls over the Merri, Moonee Ponds, Merlynston and Edgars Creeks, there is merit in considering whether controls are appropriate over the Upfield rail corridor, the Westbreen Creek and Campbellfield Creek.

Figure 7 shows the MIVA assessment sites as well as the vegetation significance of individual plots of vegetation and these 21 key areas. More detailed maps of the key areas are contained in Appendix 1.

Figure 7: Location of key sites of environmental significance



Threats to significance

The MIVA outlines that within areas of environmental significance weed invasion is the most common threat, with 351 of the 381 exotic species identified in the areas being considered as weeds. Eight weed species were identified as the highest priority for control with another 39 identified as being high priority. Other threats included rubbish, inadequate fencing, and uncoordinated management.

Actions

The Assessment's 44 recommendations are divided into six goals:

- Improve the connectivity and long-term security of indigenous habitats and species
- Maintain the diversity of indigenous habitats and species in terrestrial, aquatic and marine environments
- Achieve sustainable populations of indigenous flora and fauna species
- Achieve a net gain in the quantity and quality of indigenous vegetation
- Increase the capacity and participation of people and organisations in catchment management
- Seek continuous improvement in the planning and management of indigenous vegetation by Council and other agencies in Moreland

Whilst the primary focus of these goals will be protection and revegetation works on Council land, the Moreland Planning Scheme can support them through the use of overlay/s and policies which:

- Ensure protection of remnant and replanted indigenous species on private land;
- Encourage the planting of indigenous vegetation on private land as part of redevelopment work;
- Discourage the planting of weed species, and ensuring the planning scheme does not impede their removal;
- Ensure that remnant vegetation is not impacted directly or indirectly by redevelopment of private land; and
- Encourage community participation and protection of areas of environmental significance.

Reviewing the Environmental Significance Overlays in the Moreland Planning Scheme

A review of the existing Environmental Significance Overlay has been carried out having regard to the overall effectiveness of planning scheme controls in protecting native vegetation broadly, as well as the relevance and effectiveness of the Moreland controls themselves. This review indicates that whilst the Environmental Significance Overlay is an effective tool, significant modification is required to the format and extent of the current controls in the Moreland Planning Scheme.

A review of the effectiveness of planning scheme controls in protecting native vegetation was conducted by Parson Brinkerhoff Australia Pty Ltd¹⁹ in 2009. The project's aims were to:

- Assess the effectiveness of the planning scheme controls across the region in respect to vegetation protection;
- Examine and identify how planning scheme provisions are addressing the issue of the removal of native vegetation in some local government areas; and
- Assess the relevance and robustness of these planning scheme provisions and controls when effectively applied.²⁰

The report found that substantial areas of vegetation continue to be cleared despite the introduction of vegetation clearance controls in 1989 and implementation of the Victorian Government's 2002 Native Vegetation Management Framework. In fact:

- In the 16 years to 2005 approximately 7,681 hectares of native vegetation were cleared from the Port Phillip and Western Port Catchment, compared with vegetation gains of 558 hectares.
- Threatened vegetation types are over-represented in cleared areas, and those that remain have low condition rankings.
- Native grasslands continue to experience rapid depletion, with 3,779 hectares lost since 1989. These ecosystems are also among the most threatened in the State and the least represented in reserve systems.

The review found that 0.31% of the original area of native vegetation remained in the City of Moreland, and that all of this was classified as Endangered. Across the region it identified that there was little relationship between the bioregional conservation status of vegetation and application of the Environmental Significance Overlay in any local government area, with the result being poor protection of endangered and vulnerable vegetation in many Council areas.

The authors conclude that the 'clearing control measures' are ineffective and express concern about the inconsistent application of planning scheme overlays across local government areas and a lack of correlation between the overlays and the conservation significance of vegetation. Whilst in the order of 77% of the endangered vegetation within Moreland was protected by the ESO (compared with approximately 8% in the City of Darebin, 49% in the City of Moonee Valley, 90% in the City of Boroondara and 95% in the City of Yarra), Moreland's response to native vegetation retention was considered to be low, with the Moreland Planning Scheme having "minimal to no reference and controls relating to native vegetation".

The state government has a stated target to halt biodiversity loss²¹. In support of such a target and having regard to the findings of the Parson Brinkerhoff report and the MIVA, it is appropriate that Council review its current ESOs.

¹⁹ This report was commissioned by the Municipal Association of Victoria and managed by the Port Phillip and Westernport Catchment Management Authority.

²⁰ Assessing the Effectiveness of Local Government Planning Scheme Controls in Protecting Native

Vegetation in the Port Phillip & Western Port Region, Parson Brinkerhoff Australia Pty Ltd, 2009, Forward.

²¹ Protecting Victoria's Environment - Biodiversity 2037, The State of Victoria Department of Environment, Land, Water and Planning, 2017

How well are the current ESOs operating?

Overlay text

The marked difference between the Edgars, Melville, Merlynston, Merri and Moonee Ponds Creeks is not reflected within the text of the Overlays, with two very similar controls included in the Scheme:

- The objectives of both overlay Schedules refer to the significance of recreation and landscape character/amenity, as well as habitat values and waterway functions/quality;
- Neither include differentiation between the higher order waterway and lower order or piped waterways;
- Both consider the impact of a proposal on sites of Indigenous cultural heritage in determining whether a permit exemption applies.
- The permit requirements are largely identical;
- A large number of the decision guidelines are also identical, with differences essentially limited to waterway-specific documents and management committees;
- Neither Schedule nor their supporting documents provide guidance which specifically assists decision making along piped sections of the waterways.

There are significant differences in the stated purposes of the overlay Schedules however, and in the level of guidance provided for decision makers within the various Strategies and Guidelines detailed in the decision guidelines. The guidance provided along the Merri Creek is significantly clearer and more detailed than that provided for the Moonee Ponds Creek. However the reference to the 1999 Strategy and Guidelines within the ESO1 and the 2004 Guidelines within the former Clause 21.03-6.1 has been the source of some confusion, which is anticipated to continue with their recent inclusion into the list of background documents contained in the Schedule to Clause 72.08. The age of these documents, as well as the Moonee Ponds Creek documents (which date from 1992, 1997 and 1998) invites some scrutiny as to their relevance today.

Detailed commentary on the text of the Schedules is contained in Appendix 2 to this report. Matters which should be addressed include:

- The lack of permit requirement for fencing within the Overlay, which would appear to conflict with Criteria in the Merri Creek Development Guidelines 1999.
- The need to obtain a planning permit for the construction of relatively small industrial buildings located some distance from the Creek environs, but not for a building close to 6m in height on the residential land abutting the Creek reserve.
- The exemption from a planning permit for the removal or lopping of small trees, but not for other types of vegetation, such as grasses and shrubs.
- The lack of differentiation between indigenous and non-indigenous vegetation in terms of permit requirements;
- The conflict of permit exemptions relating to Indigenous cultural heritage and the provisions of the Aboriginal Heritage Regulations 2018.

Overlay extent

The ability of the Overlays to protect the environment surrounding the waterways is strongly influenced by the extent of the Overlay itself. As is detailed below, there is a marked difference in the current extent of Schedules 1 and 2 of the Overlay, and modification to both is appropriate.

Schedule 1

Open waterways

The extent of the Overlay is not reflective of its purposes in all instances, due in a large part to the practice of including the full depth of what were sometimes very large properties in the Overlay. Appendix 1 to the Development Guidelines for the Merri Creek 1999 outlines that the ESO1 was originally applied to areas identified as having biological or faunal and habitat significance; sites of sensitivity for Indigenous heritage; and areas where development had the potential to seriously impact on the landscape quality of the Creek, with the mapping adjusted so that it followed [then] title boundaries “for ease of mapping, use and reporting”.

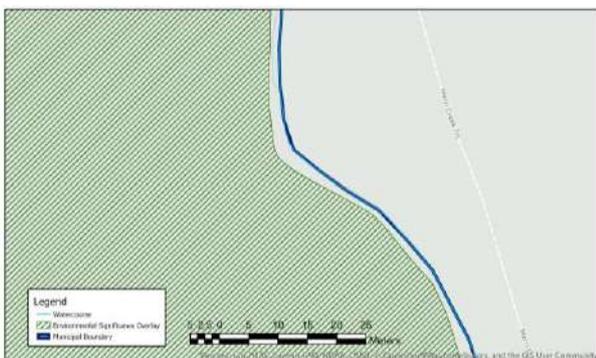
For example, the Overlay extends up to 545m from the Merri Creek at the south-eastern corner of 161A Newlands Road, seemingly due to the large size of original allotments in this area. Land subdivision conducted over recent decades means that properties such as those at 159 and 161A Newlands Road, as well as those in Milkman Way are located within the Overlay despite being well removed from the Merri Creek and associated areas of environmental significance. Construction, earthworks and vegetation removal on these properties, which are developed with small industrial buildings, will have no appreciable impact upon the significance of the waterway.

Distance from the Creek alone is not the sole factor to be considered however. Whilst land as far as 390m from Edgars Creek at the south-western corner of 120 Newlands Road is covered by the Overlay, this is reflective of the extent of significant vegetation in this location.

The Overlay surrounding the Merlynston Creek is more discrete in size, with an overall width of 35-40m.

It is noted that in some locations the Overlay does not extend to the municipal boundary, appearing instead to terminate at the Creek bank. Whilst it is unlikely to have any practical impact, given the parkland nature of the adjoining land, this would appear to be an anomaly. As an example, Figure 8 depicts this discrepancy in the vicinity of Tate Reserve.

Figure 8: Boundary of the ESO1 relative to municipal boundary and Merri Creek in Coburg East



Piped waterways

At present the ESO1 applies over sections of waterway that have long been piped. In these areas the waterway is located beneath private land and roadways as well as parkland. In practice this has resulted in:

- The boundary of the ESO effectively forming the front setback line along Sussex Street;
- Little impact upon landscaping, as the area affected is largely either frontage setback or covered by roads and industrial buildings;

The alignment of the Overlay does not accord with the alignment of the natural waterway to the south of the Fawkner Memorial Park, but follows the pipe which now performs much of its drainage function. The Moreland Nature Map identifies the existence of a habitat corridor through the area, connecting the Fawkner Memorial Park to the north with the Upfield Railway line and Merri Creek to the east. It is considered more likely that wildlife follow the natural channel than the underground one given the presence of parkland in the natural alignment.

The low relevance of the Overlay objectives and decision guidelines to properties along the piped waterways, as well as the apparent error in alignment of the Overlay currently undermines perceptions of the relevance of the control.

Having regard to the nature of construction above it, the waterway is unlikely to be reverted to an open stream in these locations, and the current ESO wording will continue to have limited application to these areas. There is potential however to improve the role of the land as a habitat corridor.

Schedule 2

Open waterways

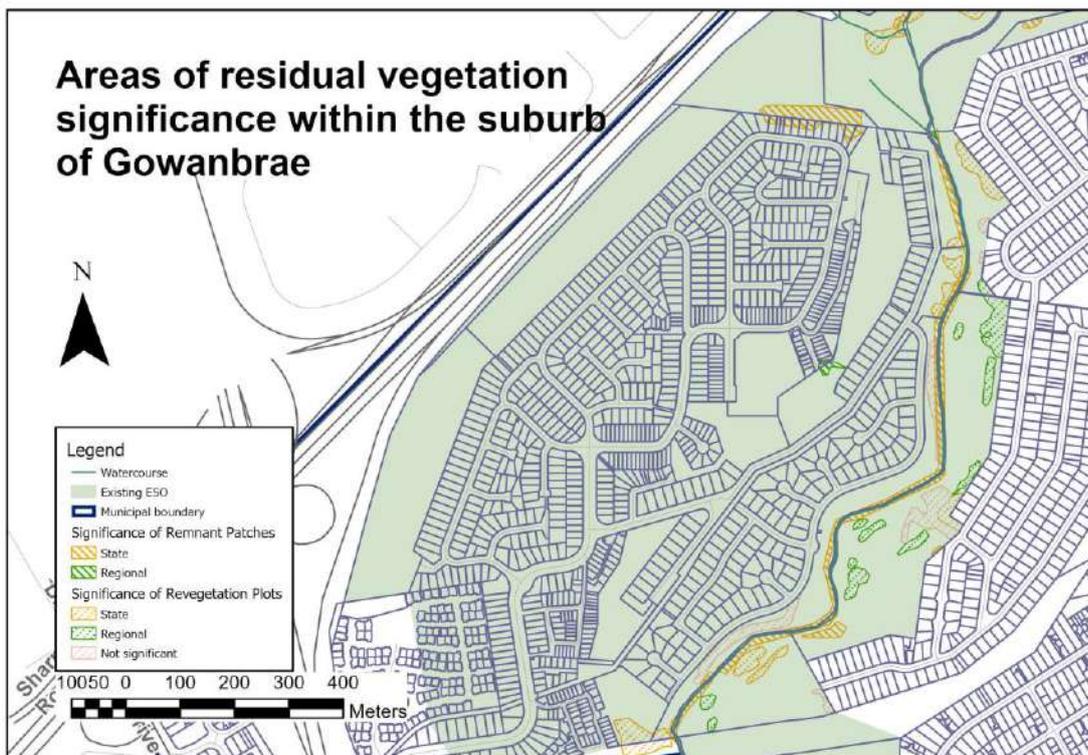
By contrast, the ESO2 primarily impacts upon public land along the waterways, with the area now home to the suburb of Gowanbrae, and small areas in the vicinities of Deveraux Street and Main Street Oak Park being departures from this rule. The section of ESO2 surrounding Melville Creek (which, like part of Merlynston Creek, is piped) has an overall width of 30-35m.

The rationale for mapping of the ESO2 is not well understood. Documentation extending from the early Watercourse Setbacks contained in the Broadmeadows and Brunswick Planning Schemes to the Moonee Ponds Creek Strategic Plan 2011 would indicate that provision of a 30m vegetated buffer along the Creek was desired to “maintain the natural drainage function, stream habitat and wildlife corridors and landscape values to minimise erosion of stream banks and verges”²². However, this guidance does not appear to have been adopted, with setbacks ranging from less than 15m in a number of locations to more than 800m within the suburb of Gowanbrae. It is unclear if the latter extent was as a result of the significance of previous vegetation in that area or the fact that it was located within a single land parcel. The extent of the Overlay often approximates the extent of parkland but does not apply to it exclusively. Overlay boundaries also do not accord with the location of significant vegetation, property boundaries, topography or distance from the Creek. In addition, in the southern portion of the municipality, the Overlay does not extend to the Creek itself, which also forms the municipal boundary, in a similar manner as is described for the ESO1.

Despite the existence of the ESO, construction of the residential development at Gowanbrae has had a catastrophic impact upon much of the significant grasslands that previously occupied the area. As shown in Figure 9, in 2011 residual areas of remnant vegetation of national and state significance were restricted to space close to the waterway, a small group of lots that were undeveloped at the time, and the parkland immediately abutting them. Only two of these private allotments remained undeveloped in December 2020.

The lack of clarity for the current mapping rationale and modification to the landscape at Gowanbrae indicates that a review of the purposes and extent of the control is appropriate.

Figure 9: Residual areas of significant vegetation within Gowanbrae



²² Moonee Ponds Creek Strategic Plan 2011, page 30

Piped waterways

The ESO2 also applies over land surrounding what is referred to as the Melville Creek. Melville Creek is identified within the Overlay as extending from Reynard Street through Coburg and Brunswick West to the Moonee Ponds Creek. The 'Creek' is in fact fully piped, and is more correctly known as the Melville Main Drain.

The extent of vegetation within the Overlay area varies significantly, with the most heavily vegetated section being a strip of privately owned land which connects Moreland Road and Cornwall Street, running primarily along the rear of properties in Shamrock Street. The difficulty of developing this land may be a greater contributor to the vegetation cover than the Overlay however, and in other areas the existence of the Overlay does not appear to have resulted in an identifiable impact on building form or planting outcomes.

Analysis of planning applications determined during 2010-2019

A review of planning applications determined within the ESO areas for the decade commencing on 1 January 2010 reveals that a total of 285 applications were considered under the Overlay, with 106 of these being within the Gowanbrae housing estate alone. Of these 285 applications, nine were refused, with the remainder resulting in the issue of a planning permit. An annual break-down of applications is detailed in Figure 10.

As indicated in Figure 11, there is a significant difference in the types of applications considered under the two Overlays, with markedly more applications involving tree removal and commercial/industrial land within the ESO1.

Figure 10: Applications decided by year

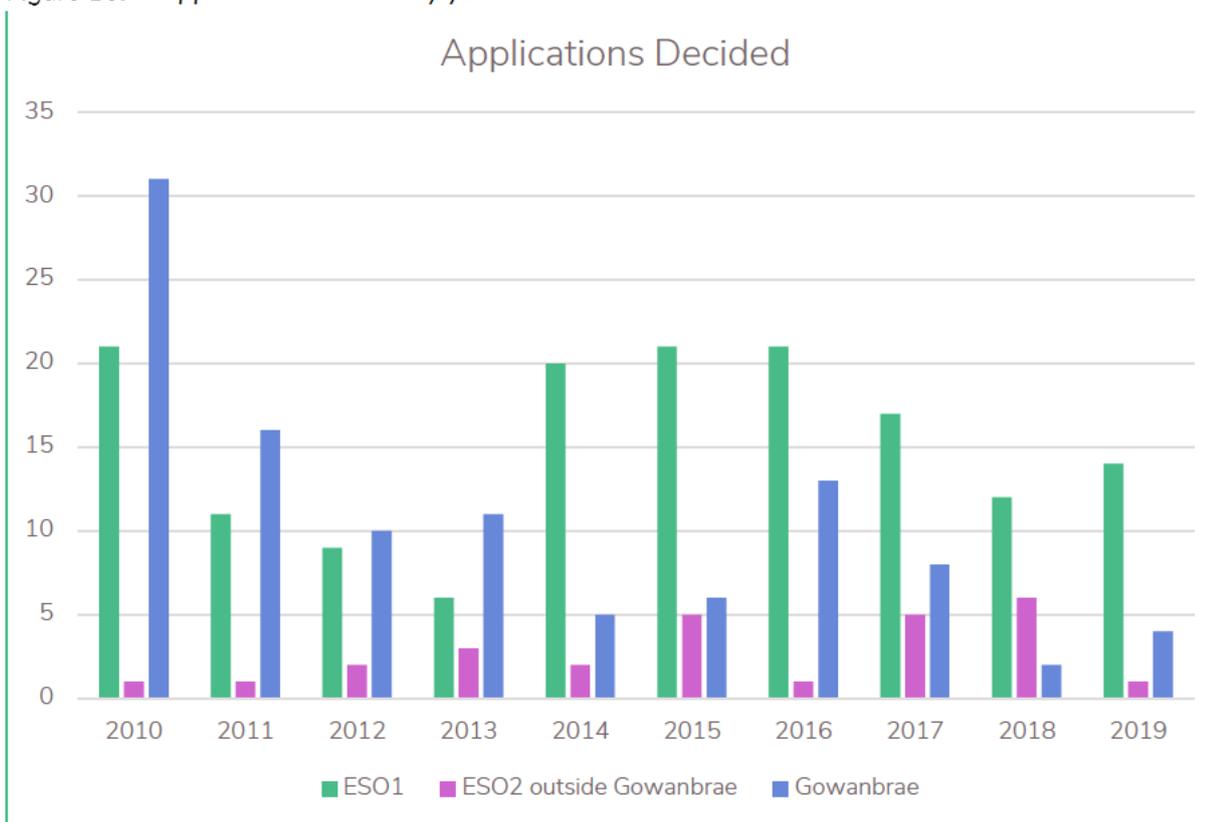
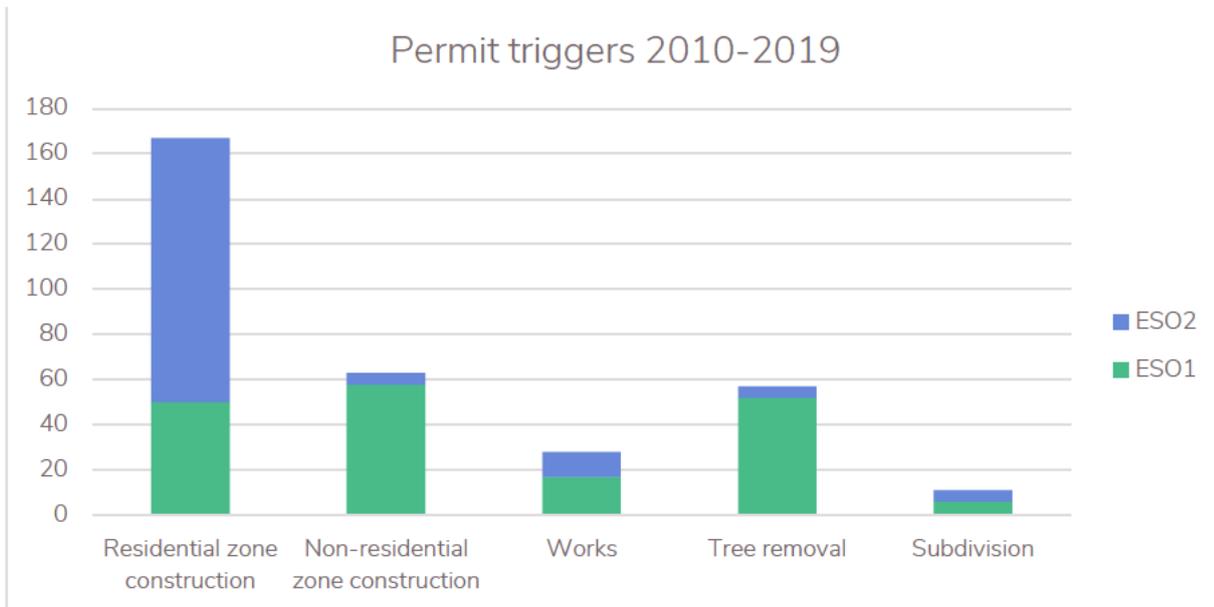


Figure 11: Planning permit triggers 2010 – 2019 (note that applications may have more than one trigger)



Within these applications:

- There were a number of instances of multiple applications for a site either within the study timeframe or over a longer period where subsequent applications sought to address reasons for refusal of an initial application.
- 19 of the 58 applications for buildings and works in the non-residential zones in the ESO1 were for internal additions (i.e. Construction of a mezzanine) to industrial buildings. Whilst such a proposal requires a permit under the Overlay this was not uniformly noted by the assessing officer and there would appear to be no implications for the Creek environs associated with an internal floor area increase.
- 21 of the 57 applications for tree removal or lopping were for land owned or managed by Council or a public body. The majority of the remainder were for tree removal in conjunction with development. This would indicate that amongst the broader rate-base there are low levels of knowledge of, or perhaps regard for, the vegetation protection controls which are included in the Overlays.
- The low number of applications which included Works, and their restriction to applications which also proposed construction, would appear to indicate low levels of knowledge or regard for this aspect of the control.
- The subdivision applications received were all for the subdivision of approved development. In assessing these applications Council formed the view that cash, rather than land, contributions to public open space were appropriate given the previously approved development layout. The potential need to set aside space for future public open space was also not considered as part of the prior development applications, and opportunities to strengthen the corridor have been lost as a result, despite a stated desire in the then-Clause 21.03-6 to “Create a continuous public open space corridor with a minimum of 50 metres on each side along the Moonee Ponds, Merri and Edgars Creeks”.
- The significance of the legal point of discharge and its design on the environmental significance of the waterways and on existing vegetation was not often considered within the planning process.
- 236 applications needed approval under the Environmental Significance Overlay alone. These applications took on average 77 calendar days from lodgement to decision, with additional time required to assess any amended plans required by permits issued. It is estimated that on average 3.5 weeks of officer time per year is spent on these applications.²³

²³ Based on 6 hours of combined officer time per application, inclusive of assessment of a single submission of Condition 1 plans.

Consideration of how the control is performing included an assessment of the officer reports on all applications lodged within the Overlay's extent over a 10 year period. This indicated:

- Poor application of the permit exemptions, with the impact of cultural heritage being considered in very few applications, with fewer still requiring information that would be necessary to test the exemption.
 - A preference for advertising to the Merri Creek Management Committee as a means of obtaining their views, but inconsistency in conducting this notification.
 - No evidence of consideration of the views of the Moonee Ponds Creek Coordinating Committee (MCCC) or Aboriginal Affairs, Victorian Heritage Services Branch. It is noted however that the MCCC no longer exists, and the review did not investigate whether there had been any broad-scale consideration of whether the views of an alternative body should be sought.
 - Limited evidence of consideration of the views of Melbourne Water, and some confusion from the Authority as to the nature of advice it should provide.
 - A lack of application of the control purposes and reference to the decision guidelines in many instances, with assessments often overly simple and focused on neighbourhood character. This would appear to be at least partially due to the lack of clear decision guidelines within the Schedule text
 - Difficulty in understanding the relevance of the control to properties relatively remote from the Creek or where the waterway is in an underground pipe. It is observed that this difficulty can undermine perceptions of the validity of the control.
 - A failure to identify that the ESO protects a broad range of vegetation types, not trees alone.
 - Low levels of evidence of referral to the Guideline documents, particularly with respect to the Moonee Ponds Creek. A review of the document itself reveals that it has limited applicability to consideration of applications on private land.
- Consideration of dwellings within the Gowanbrae Estate was largely limited to the its compliance with the Development Plan Overlay Schedule 6 and potential visual impact that the dwelling would have from the Creek, bearing in mind the consistent two-three storey form that was being developed, and with an assumption that buildings separated from the creek would have little or no impact upon it. There was limited evidence of site inspections involving viewing a property from the Creek itself, information on residual vegetation on the allotments, and permits did not include requirements for landscaping. It would appear that the presence of the ESO did not alter or influence built form outcomes on these properties, where the original subdivision set the scene for development.
 - No perceptible impact upon permit conditions relating to landscaping, stormwater or external illumination when compared with similar applications located outside of the Overlay.

The result is that whilst the controls may have altered built form adjacent to the waterways, they have resulted in little impact to the landscape or habitat value of private land or on built form at greater distances from the waterways. Inspections indicate that this extends to ongoing use of non-indigenous and sometimes weed species within landscaping of multi dwelling development adjacent to the Moonee Ponds Creek.

VCAT decisions

VCAT's consideration of the ESO1 varied significantly, from having no stated regard to the Overlay²⁴ to a detailed assessment. Those applications where a detailed assessment was conducted were more likely to follow a detailed Council assessment, and to lead to the Tribunal upholding Council's decision on the application. Notable examples included the applications for review at 2 Spry Street, Coburg North²⁵ and 58 Trade Place, Coburg North²⁶. The importance of a methodology having been utilised in mapping the Overlay, rather than a blanket control having been applied was expressed in the latter.

²⁴ For example: Project Planning & Development Pty Ltd v Moreland CC [2015] VCAT 1513 and Land Republic Pty Ltd v Moreland CC [2017] VCAT 1157

²⁵ MLP Corporation Pty Ltd v Moreland CC [2017] VCAT 1566

²⁶ Antech Property Group Pty Ltd v Moreland CC [2020] VCAT 759

There were no appeals relating to properties in the ESO2 in the study period, however an assessment of earlier appeals indicated the importance of the parkland interface of a development, with these including requirements for transparent fencing and appropriate landscaping²⁷.

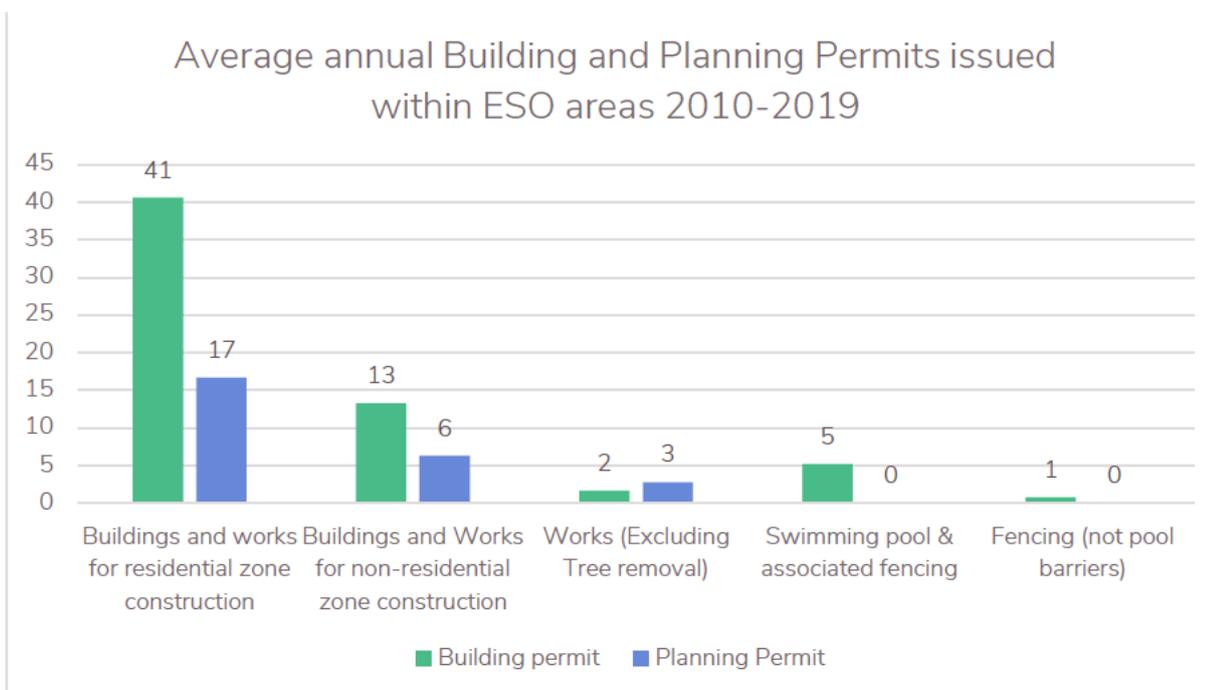
The importance of considering the character of the Creek interface where an ESO does not apply is highlighted by three appeals for the property at 33 Mitchell Parade Pascoe Vale South, where two applications for redevelopment with nineteen and sixteen dwellings respectively were refused by both Council and VCAT, with an eight lot subdivision ultimately approved by the Tribunal²⁸.

How much exempt construction is occurring?

A review of Building Permits issued for land affected by the Overlay indicates that, on average, 24 more building permits than planning permits are issued for construction in residential zones per year. Of these, six are for underpinning or restumping of existing dwellings. The residual eighteen applications a year are for items such as the construction of dwellings less than 6 metres in height, internal alterations to dwellings, and the construction of decks. Five building permits are issued for swimming pools and associated fencing annually.

There are approximately twice as many applications for building permit as planning permit within non-residential zones. A review of these applications indicate that the majority are for works associated with the Northern Metropolitan Memorial Park, to Council properties and government schools, where a broad range of construction is able to occur without a planning permit

Figure 12: Building and Planning Permit activity (excluding matters such as tree removal and use of land, which do not require building approval)



²⁷ [\[2003\] VCAT 530](#) and [\[2002\] VCAT 1720](#)

²⁸ [Shalon Sixteen Pty Ltd v Moreland CC \[2008\] VCAT 1980](#), [Shalon Sixteen Pty Ltd v Moreland CC](#)

[\[2010\] VCAT 686](#) and [Jopsal Pty Ltd v Moreland CC \[2020\] VCAT 392](#)

Future protection for sites of environmental significance

Is Overlay protection warranted?

Whilst limited stands of indigenous vegetation remain within the City, the Parson Brinkerhoff study found that all of the vegetation communities they represent are classified as endangered. The MIVA identifies land supporting remnant vegetation of local, regional, state and national significance within the municipality. Corridors of land along the Westbreen Creek and the Upfield railway line are identified as including a number of parcels of significant remnant vegetation, including sightings of national and state threatened species. Alongside these findings, the Statements of Significance contained in Schedules 1 and 2 remain current for the Merri, Moonee Ponds, Edgars and Merlynston Creeks.

Whilst relatively large tracts of environmentally significant land are held in public ownership, not all of it is set aside for environmental, or even parkland, purposes. In addition, some of the most significant vegetation is within private ownership or management, whilst weed infiltration is the most significant threat to all areas of significance.

Together, these factors would indicate that planning scheme protection is warranted, and additional areas should be contemplated for inclusion in some form of control.

Clause 52.17, whilst providing some protection to native vegetation, includes a number of exemptions which mean that it has limited effectiveness in Moreland's urban context. In particular, exemptions for lots less than 4,000m² in area (unless it is contiguous with other land in the same ownership) would mean that no planning permit is required for the removal of vegetation on most properties in the City, including parts of the following significant sites:

- Edgars Creek Merri Creek to Kodak Bridge
- Merri Creek – Carr Street to Keady Street
- Newlands Road, south of Wreckers
- Moonee Ponds Creek Escarpment Union Street, West Brunswick

Exemptions associated with the construction of fencing; mowing of native grasses; lopping and pruning for maintenance and for planted vegetation all also reduce the number of instances where a permit is required. Interactions with land owners also indicates that the control's location within the Particular Provisions of the Moreland Planning Scheme, rather than within a Zone or Overlay also impacts upon public awareness of its existence.

Clause 53.18 provides some protection of the water quality of creeks as a result of new development, including construction of that development, by providing decision guidelines in relation to the treatment of stormwater and its point of discharge, but these are insufficient to protect the full range of significance of the Creek environs.

Areas of significance not covered by the Overlay

As is indicated by Table 3, seven of the 21 most significant vegetation sites within the municipality are either not affected by the ESO or have only part of their vegetation protected. These are located along the Campbellfield Creek (Northern Memorial Park extension and Melbourne Water Retarding Basin); the Merlynston Creek (again, the Northern Memorial Park extension, also the Fawkner Crematorium and Memorial Park, the Northern Memorial Park Southern Block and the Box Forest Retarding Basin), and the Westbreen Creek (Northern Golf Course and K. W. Joyce Reserve).

Key areas are as follows:

Campbellfield Creek

The title of the ESO1 would appear to indicate that the Campbellfield Creek was initially intended to be covered by the Overlay, although it has in fact not ever been included within the control.

The Creek traverses land owned by various public bodies and includes the Northern Memorial Park and its northern extension, the Melbourne Water retarding basin and sections of the Upfield rail line. This land continues to support some of the most environmentally significant vegetation within Moreland, although there have also been significant losses, including losses since the preparation of the MIVA.

The Westbreen Creek

The Westbreen Creek corridor contains areas of national significance from a remnant vegetation perspective and areas where revegetation is of state significance. Clause 02.03-2 recognises this significance and seeks to ensure that development does not compromise the ecological integrity of the corridor.

Whilst the presence of parkland along the Creek has afforded Council with the ability to carry out planting to provide linkages between the areas of identified environmental significance, inclusion of the Creek and surrounds within an Environmental Significance Overlay has been identified for consideration by the 2010 and 2018 planning scheme reviews. Inclusion of an Overlay within the Scheme is considered to be appropriate based on the significance of vegetation in this vicinity, as detailed in Appendix 6.

Rail corridors

Suburban and VLine rail corridors running through the City serve as corridors for the movement of fauna as well as train passengers. They support, or are adjacent to, areas of national and state vegetation significance. Protection of the vegetation, and an encouragement to plant additional indigenous species, has the potential to improve the value of these areas without impacting on the function of the railway.

With the exception of land located within one of the key MIVA areas, consideration of the potential for these areas, as well as other pockets of significant remnant vegetation and revegetation patches to be protected by the Moreland Planning Scheme, or by some other mechanism, is beyond the scope of this review. In determining whether or not to pursue any Overlay control on these areas it would also be necessary to have regard to the ownership of land, with there being limited practical benefit in instigating such a control over wholly Council-owned land, or land owned by public authorities which hold exemptions from the need to obtain planning approval. For example, it is noted that the head provision of the Environmental Significance Overlay includes an exemption for

Vegetation that is to be removed, destroyed or lopped to the minimum extent necessary to maintain the safe and efficient function of an existing railway, or railway access road...

Suite of available controls

Whilst Clause 19-02 in particular recognizes the varied function of open space areas, and in particular those which have both recreational and environmental functions, the suite of available planning scheme tools are each more targeted in the objectives they seek to uphold.

A review of the available overlays is contained in Appendix 3 to this report and indicates that the Environmental Significance Overlay remains the most appropriate tool where sites of identified environmental significance are sought to be retained and enhanced. This is supported by both the Parson Brinkerhoff Report and the Moonee Ponds Creek Issues and Opportunities Assessment, with the latter suggesting that a Design and Development Overlay be used in association with the ESO.

Where the significance of an area is scenic rather than environmental, such as areas that form a backdrop to a Creek valley, a Significant Landscape Overlay may also be appropriate however the lack of a permit requirement for subdivision within that Overlay would need to be considered.

Parameters for revising the Environmental Significance Overlays

The Merri, Edgars and Moonee Ponds Creeks do not traverse the City of Moreland alone – they have their sources further north, and the Merri and Moonee Ponds Creeks have their confluences with the Yarra and Maribyrnong Rivers downstream of Moreland. Historically, the regional significance of the Merri Creek has been recognised in the planning scheme through the very similar controls applied to it in a range of Victoria’s planning schemes. Whilst planning controls along the Moonee Ponds Creek are currently more varied, the Department of Land, Water, Environment and Planning has identified the need for a regional approach and is believed to be currently considering whether implementation of an environmental or landscape control across a range of planning schemes is appropriate.

Moreland has an opportunity to encourage ongoing regional cooperation along the waterways by sharing its review of the planning controls along its waterways with other like-Councils and lobbying the State Government to convene discussions about a joint amendment to the relevant Planning Schemes; a role it has recently performed along the Yarra River.

The Westbreen Creek is wholly contained within the City of Moreland however, and implementation of an Environmental Significance Overlay over it and its environs can be implemented separately if necessary.

Overlay text

Appendix 2 contains a detailed assessment of the text of the current Overlays, whilst Appendices 6 and 7 also include some suggested text for the Westbreen Creek and piped sections of waterways. Additional comment is warranted in relation to the exemption which currently applies for residential construction up to 6m in height, the lack of permit requirement for fencing, and the documents referred to in the decision guidelines.

Residential building height

Development in close proximity to the creeks and sites of identified environmental significance has the potential to significantly impact upon the environmental qualities of the creek environs that are relied upon by wildlife and enjoyed by users of the trails in these locations. Whilst at present Schedules 1 and 2 both include an exemption from the need for a permit for the majority of residential development that is under 6m in height, construction of this magnitude close to the Creek environs or significant vegetation may have comparable environmental impacts to development that is over 6m in height. The exemption is not considered to be reflective of either the Planning Policy Framework or the guidelines outlined above, and it is not considered to be an appropriate permit exemption within the Core Riparian Zones or Vegetated Buffers outlined below.

Whilst some development of properties further afield (for example, abutting parkland that extends beyond the proposed Overlay area, or on the escarpment in Gowanbrae) has the potential to impact upon the environment as experienced by parkland users, it is considered that the depth of Overlay proposed allows sufficient space for the planting and retention of vegetation to soften the visual impact of this development in the overwhelming majority of cases. Where more detailed design criteria are required from a visual impact perspective use of a Significant Landscape or Design and Development Overlay should be investigated.

Removing the exemption for most residential development that is under 6m in height from the Overlay will have some impact upon the number of planning applications required, however as detailed earlier, this is anticipated to be less than twenty per year. The resource implications associated with this number of applications is considered to be outweighed by the potential environmental benefits that can be achieved through the provision of appropriate building siting and landscaping.

Fencing

The lack of permit requirement for fencing along the Merri Creek would appear to be directly at odds with the Merri Creek Environs Strategy. Use of permit exemptions to encourage transparent fencing along waterways is considered to be advantageous, as such fencing retains the desired boundary delineation whilst allowing surveillance of the parkland from private property. Whilst such fencing is supported by urban design policies within the planning scheme, a lack of permit requirement for boundary fencing overwhelmingly results in perpetuation of timber paling fences along parkland boundaries.

In addition to the anticipated safety improvements for users of the parkland that are associated with passive surveillance, transparent fencing allows residents to have visual 'ownership' of the parkland. The State government advises that those who spend time in nature are more likely to recognise its importance and seek to protect it²⁹. By enabling adjoining residents to interact with nature from within their properties, it is anticipated that an increased understanding of the importance of the flora and fauna that it contains will result.

Decision Guidelines

The Development Guidelines for the Merri Creek aid decision making along that waterway, however little guidance is provided by the Moonee Ponds Creek Landscape Revival Strategy, Northern Zone Concept Plan, or Concept Plan. Due to the infrequency of permit applications along the waterways it is considered that the provision of a suitable guidance document to assist planners in understanding the environmental considerations inherent in the ESO would be advantageous. It is understood that Melbourne Water are considering the development of such guidelines, and these may be a useful reference. Alternatively, development of a Moreland-specific document may be necessary. This should include advice on a range of matters, and diagrammatic assistance to provide clarity for decision makers and proponents alike.

Overlay extent

Land, including privately owned land, along waterways has an important role in supporting wildlife, and the protection and enhancement of these areas as habitat for indigenous flora and fauna should be a core objective of the Environmental Significance Overlay.

The MIVA provides information in relation to the significance of specific patches of vegetation. In determining an appropriate Overlay extent it is necessary to consider the need to protect these patches in a manner that links them to provide protection of a habitat corridor; and the importance of this environmental resource to people as well as fauna and flora. The latter should have regard to the differing characteristics of the creeks.

With this in mind, it is noted that there are variations in the extent of vegetation buffer specified as appropriate in a range of the background documents reviewed:

- Clauses 14.02-1S and 19.02-6L of the Moreland Planning Scheme seek the provision of vegetation within 30m of either side of Creek banks;
- The Merri Creek Development Guidelines 1999 seek to ensure that a 12m deep landscape buffer is provided between a shared trail and development, and at the top of the escarpment where no trail is provided.
- Melbourne Water's 'Waterway Corridors: Guidelines for greenfield development areas within the Port Phillip and Westernport Region' (Waterway Corridor Guidelines) incorporate a more nuanced approach based upon the size of the waterway and its individual characteristics.

Of these, it is considered that the approach taken by the Waterway Corridor Guidelines, with adjustments for topography as necessary, is appropriate.

²⁹ Protecting Victoria's Environment - Biodiversity 2037, The State of Victoria Department of Environment, Land, Water and Planning, 2017

The preliminary criteria for mapping the Overlay would then be as follows:

- Sites of environmental significance, and a buffer around them;
- A setback area surrounding the waterway. This may include additional areas around associated escarpments and shared trails and additional space where required to ensure that areas of habitat are connected; and
- Public parkland adjacent to the waterway, and a buffer around it.

These areas will overlap with one another, and the combined area should be utilised as a starting point for mapping. They are described in more detail below and a detailed application of the criteria to each waterway is included in Appendices 4-7.

Sites of environmental significance

Sites of identified environmental significance by the MIVA (including revegetation sites of significance) plus a buffer of 5m around them should be included in the Overlay.

In order to recognise the importance of the 'top 21' sites; their potential to support increased areas of vegetation over time and the habitat that they provide, these sites should be included within the Overlay as a whole. Significant vegetation patches in other locations and their associated buffer can be included as patches, rather than an entire site. The buffer outlined is consistent with the recommendations of both the MIVA and the 1999 and 2004 Development Guidelines for the Merri Creek.

Mapping should not include that vegetation known to have been removed in the interim: this will include allotments within Gowanbrae which have been developed with dwellings since 2011, and some land within the Northern Memorial Park Extension.

Waterway setbacks

Melbourne Water's Waterway Corridor Guidelines provide guidance for the width of corridors along waterways which are based upon the type of waterway and size of its catchment. These widths are each divided into a core riparian zone and a vegetated buffer zone, and the Guidelines indicate that

These setback widths have been defined following a comprehensive review of waterway management science in Australia and worldwide. They provide a balance between achieving river health and biodiversity objectives, providing for recreation and visual amenity and maximising developable land.³⁰

These Guidelines are intended to guide decisions on how much land should be set aside for open space along waterways in greenfield situations. However, given its urban setting, the objectives and science utilised is also useful to guide the mapping of a revised Environmental Significance Overlay along Moreland's waterways.

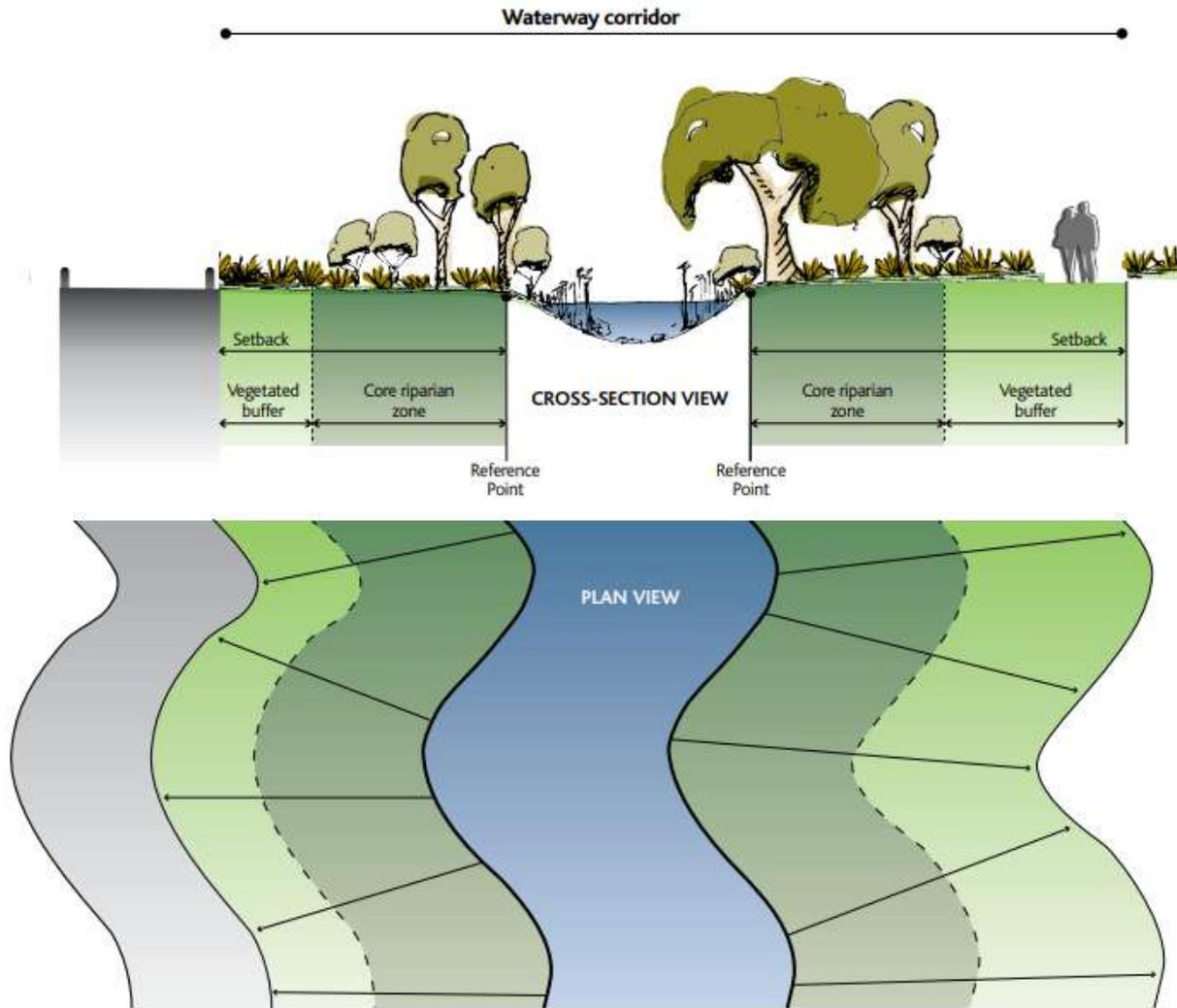
Natural waterways

The Guidelines outline that corridor widths for natural watercourses with catchments of more than 60ha should vary based upon the catchment of the waterway and its Strahler Stream Order. Widths range from 20m on each side for first and second order streams to 50m on each side of the bank for fourth order streams. These widths are divided into a core riparian zone (variable in width, based on stream order), and a 10m wide vegetated buffer zone, as depicted in Figure 13.

³⁰ Source: Waterway Corridors: Guidelines for greenfield development areas within the Port Phillip

and Westernport Region, Melbourne Water, 2013, page 9.

Figure 13: Waterway Corridor Schematic for natural waterways³¹



The Guidelines indicate that Councils are generally responsible for management of streams with catchments of less than 60ha. They note the difficulty in determining an appropriate corridor width for them, concluding that

... hydrology and nutrient/ sediment/pollutant input may be equally or more important than 'buffer' widths in maintaining their condition. A 10-20m buffer width for each bank is cited as a recommended minimum in several studies listed in this document³²

Land within the Core Riparian Zone and Vegetated buffer as outlined in the Waterway Corridor Guidelines should be included in the Overlay. An assessment of waterways would indicate that the setbacks in Table 5 are an appropriate baseline for the natural waterways.

The hydraulic width of constructed waterways is currently being revised, with Melbourne Water adjusting their mapping to include an allowance for climate change. It is anticipated that this would increase the area subject to inundation as a result of the 1% AEP flood event, which in turn would impact upon the buffer sought. This table and the resultant mapping will need to be revised after the Melbourne Water mapping is finalised in late the second half of 2021.

³¹ Source: Waterway Corridors: Guidelines for greenfield development areas within the Port Phillip and Westernport Region, Melbourne Water, 2013, page 12.

³² Waterway Corridors: Guidelines for greenfield development areas within the Port Phillip and Westernport Region, Melbourne Water, 2013, page 11

Table 4: Minimum Core Riparian Zones and Vegetated Buffers for natural waterways in Moreland (measured from bank)

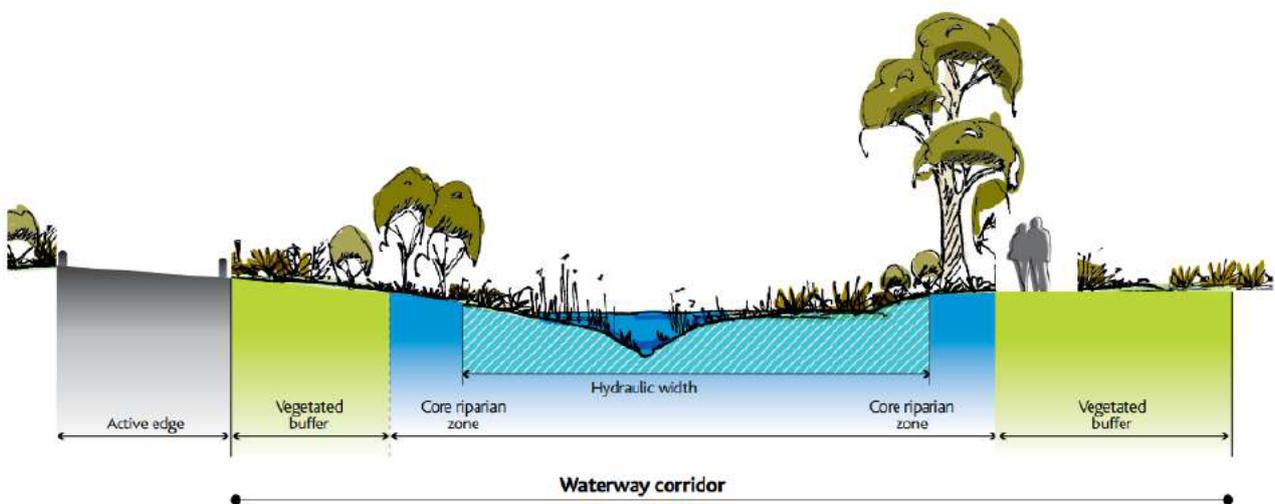
Waterway	Strahler Order	Core Riparian Zone	Vegetated Buffer	Total
Campbellfield Creek	1 st order	10m	10m	20m
Merlynston Creek, north of Campbellfield Creek	1 st order	10m	10m	20m
Westbreen Creek	1 st order	10m	10m	20m
Merlynston Creek, downstream of Campbellfield Creek	2 nd order	10m	10m	20m
Edgars Creek	4 th order	40m	10m	50m
Merri Creek	4 th order	40m	10m	50m
Moonee Ponds Creek	4 th order	40m	10m	50m

Constructed waterways

Guidance for waterways in constructed channels is that both the core riparian zone and the vegetated buffer should increase in width as a channel gets larger, with additional allowance for a shared trail in some instances. Unlike the open waterways, these corridor widths include the waterway itself. This is depicted in Figure 14.

The size of the waterway corridor is calculated based on the hydraulic width of the waterway, which is defined as that waterway’s 1% AEP flood extent. Council’s current records indicate hydraulic widths as detailed in Table 6.

Figure 14: Waterway Corridor Schematic for channelised waterways³³



³³ Source: Waterway Corridors: Guidelines for greenfield development areas within the Port Phillip and Westernport Region, Melbourne Water, 2013, page 17.

Table 5: Waterway corridor widths for constructed waterways (waterway contained in Core Riparian Zone)

Waterway	Hydraulic width	Core Riparian Zone	Vegetated Buffer	Total
Campbellfield Creek	14.7m	25m	15m	40m
Westbreen Creek	Unknown ³⁴	25m	15m	40m
Moonee Ponds Creek (upstream of Herbert Reserve)	17m – 19m	25m	15m	40m
Moonee Ponds Creek (Herbert Reserve to Esslemont Reserve)	20m – 36m	30m	15m	45m
Moonee Ponds Creek (downstream of Esslemont Reserve)	13m – 23m	25m	15m	40m
Merlynston Creek, north of Campbellfield Creek (open channel)	17.7m	25m	15m	40m

Piped waterways

Whilst piped waterways are a type of [heavily] constructed waterway, they can experience significantly broader flooding at the 1% AEP flood event than an open channel. For example, current mapping indicates that the Merlynston Creek has a hydraulic width in the order of 17.7m north of John Street where it is located within a constructed channel, but in excess of 180m south of Boundary Road, where it is located within a pipe. The width is related to topography rather than simply the capacity the waterway however, with this width reducing to approximately 45m at Ulm Street.

This variability means that use of the hydraulic width to guide a corridor width is not appropriate for the piped waterways. As an alternative, the following is suggested:

- Applying the same corridor width for the piped sections of the Merlynston and Westbreen Creeks as for their constructed waterway sections;
- Provision of a 20m wide corridor on either side of the Melville Creek, which corresponds to advice within the Waterway Corridor Guidelines that a width of 10m – 20m is appropriate for smaller streams.

Variations to standard vegetated buffers

The Waterway Corridor Guidelines outline a number of instances where the standard vegetated buffers should be increased. These are detailed in Table 6, and depicted in the appendices.

Municipal edge

The mapping criteria outlined will ensure that the Overlay extends to the municipal boundary, addressing the issue of a lack of coverage over the creeks themselves.

³⁴ Council's current mapping of Melbourne Water drainage assets indicates flooding along the Westbreen Creek as being related to a pipe rather than an open channel. It is anticipated that a revision of the Melbourne Water mapping will alter this designation and may result in a significant modification to its hydraulic width where contained within a constructed channel as a result. In the interim, a conservative width of 20m has been utilised.

Table 6: Variations to standard Vegetated buffers

Reason for variation	Comment
Sites have specific environmental significance.	This has been addressed with respect to the MIVA mapping criteria.
A site forms an important part of an existing or potential habitat corridor.	This is relevant for a section of the Merlynston Creek, as detailed in Appendix 4.
A fuel break is required to mitigate fire risk.	N/A
A site has been determined by Melbourne Water to contain significant local or regional waterway values.	<p>The Merri and Moonee Ponds Creeks have been identified as valued local waterways by Melbourne Water³⁵. The sense of seclusion achieved within the Merri Creek Linear Park is of particular importance to its role as a regional resource. In addition, both Creeks have associated escarpments which are of significance.</p> <p>The Development Guidelines for the Merri Creek 1999 would indicate that to ensure that the sense of remoteness along them is maintained development along the Merri and Edgars Creeks should be set back at least:</p> <ul style="list-style-type: none"> – 12m from the shared trail or proposed trail, – 22m from the break of slope, where applicable. <p>The 2004 Guidelines go further, suggesting that land within 12m of the escarpment be set aside as parkland if there is no path proposed, and that this increase to 22m if a path is intended, with development set back at least 30m from the Creek in urban areas.</p> <p>Utilising these dimensions as a boundary for the Overlay may have the result of encouraging hard setbacks of built form at the edge of the Overlay, which is not appropriate. However, applying the Overlay to an area 20m from the shared trail and 50m from the break of slope (corresponding with the minimum buffer sought, and the 4th order stream setback respectively) would allow the full impact of development on the Creek environs to be considered.</p> <p>The 20m setback from the shared trail is also directly applicable to the Moonee Ponds Creek, with 20m from the Union Street escarpment in Brunswick matching the Constructed Waterway waterway corridor width in this location. However, the setback of the Gowanbrae escarpment from the Creek, the openness of the landscape in this location and the extent of development which has been approved along the escarpment means that a scenic rather than environmental control is appropriate in this location. It is understood that the State Government is considering such a control, and as a result in this location inclusion of the escarpment as a mapping criteria is not proposed.</p>

³⁵ Healthy Waterways Strategy 2018, Melbourne Water 2018, page 12

Reason for variation	Comment
	Both information generated by Melbourne Water and Council's contour information and 3D imagery has been used to locate the banks of some sections of the Merri and Westbreen Creeks. Whilst such mapping is an estimation of the location of the bank, the use of a buffer of at least 20m from the bank to the edge of the Overlay will ensure that any minor errors in the location of the bank are not problematic.
A waterway reach requires greater protection to ensure significant upstream or downstream values are protected.	
High value geomorphic features or assemblages may be negatively affected by adopting inadequate setbacks e.g. escarpments or chain of ponds.	Refer above. In addition, retarding basins, ponds and the like along the waterways, with a buffer around them that corresponds to the natural watercourse, should be included within the Overlay.
There is risk of significant channel migration in the future (presence of highly erodible soils).	Whilst channel migration would appear to be an issue – there are instances where the Melbourne Water bank mapping, which was conducted in 2011 is now located within the waterway of the Merri and Edgars Creeks, the extent is not so significant as to warrant an additional buffer area around the Creek. Council mapping reflects the current stream alignments and a periodic review would appear to address the issue.
Biodiversity conservation or stormwater quality assets are required within the waterway corridor.	
Substantial recreation-based assets are proposed to be placed within the waterway corridor.	This has been addressed through the inclusion of the full depth of public parkland adjacent to the waterways.
Waterway corridors may need to be expanded to include wetlands associated with the system or modified to provide an adequate connectivity between the wetland and the waterway corridor.	
Cultural heritage sites of significance have been identified.	
In situations where the standard waterway corridor width – as specified in these guidelines – is less than the width of the post development 1 in 100 year ARI flood extent, the waterway corridor will be extended to include the entire 100 year ARI flood extent i.e. the 100 year ARI line becomes the waterway corridor boundary.	In this instance the requirement of the Guidelines is not considered to be applicable to the current review – the Waterway Corridor Guidelines would seek that land subject to flooding in a 1 in 100 year ARI flood event (now referred to as a 1% Annual Exceedance Probability or 1% AEP event) be held in public ownership for parkland and environmental purposes. Whilst this can be accommodated in greenfield areas it is not the case in established areas. Inclusion of the full flood extent within the Environmental Significance Overlay is not necessary from a habitat perspective, although Council and Melbourne Water are currently in early stages of development of a separate amendment to review flood controls within the municipality.

Finalising an Overlay extent

The mapping detailed in Appendices 4-7 should be considered as a draft Overlay extent, with anticipated refinements including revisions following the detailed considerations outlined for some areas in the appendices, as well as the following:

Reducing complexity

The draft Overlay boundary is complicated in form, and it is considered that application of the Overlay in practical terms would benefit from a simplification of boundaries to property boundaries where these are in relatively close proximity to the draft Overlay extent, and a reduction in the complexity of the boundary for larger parcels, as depicted in Figure 15.

Public parkland adjacent to the waterway

Waterways, and vegetation along waterways are important as habitat and movement corridors for native fauna and are recognised in regional strategies such as Melbourne Water Healthy Waterways Strategy. Parkland adjacent to the waterway has a greater potential to be revegetated to support wildlife than similarly located private land given Moreland's urban context and should be included within the Overlay in recognition of this. Including a 5m buffer around these spaces would encourage the provision of an appropriate interface with the parkland, including landscaping, transparent fencing and building design that includes opportunities for passive surveillance.

The preparation of this review has revealed that the Public Open Space dataset in Council's records, upon which the current mapping is based, is incomplete. Prior to finalising a draft Overlay extent this should be updated to ensure that all parkland along the waterways and a 5m buffer around it, is included.

Figure 15: Example simplification of Overlay boundary



Recommendations

There is overlap between this review and the review of the Moreland Open Space Strategy (MOSS), which is to be expanded to include both open space and environment, in 2022. It is anticipated that the MOSS review will result in a need to amend the Moreland Planning Scheme.

The recommendations of the current review have therefore been divided into actions that may be implemented now and those which should be considered as part of the MOSS review.

Short term actions

To be completed within the coming 6-12 months:

- 1.1. Develop information sheets to assist both Council Urban Planners and land owners on suitable planting within the Environmental Significance Overlay area and creation of sensitive parkland interfaces.
- 1.2. Prepare standard condition/s for use by Council Urban Planners which seek planting to include an emphasis on indigenous vegetation and site management during construction adjacent to areas of significance.
- 1.3. Conduct training of Urban Planning staff on the relevance and implementation of the Overlay in various locations.
- 1.4. Review the protocol for the referral of planning applications to Council's Open Space Unit.
- 1.5. Provide a copy of this report to:
 - a. The Merri Creek Management Committee and Melbourne Water staff consulted during preparation of the report, with thanks for their assistance.
 - b. The Department of Environment, Land, Water and Planning with a request that take the lead in joint planning scheme amendments to provide consistent and updated controls along the Merri, Edgars and Moonee Ponds Creeks.
 - c. Neighbouring Councils and members of the Moonee Ponds Creek Planning Controls Working Group with a request that they join the City of Moreland in asking the State Government to take the lead in joint planning scheme amendments to provide consistent and updated controls along the Merri, Edgars and Moonee Ponds Creeks.

Medium term actions

It is recommended that the MOSS review include consideration of the following:

- 2.1. Consideration of the need for a planning scheme amendment/s to alter the extent and content of the Environmental Significance Overlays within the Moreland Planning Scheme, having regard to this report.
- 2.2. Consideration of the need for an Environmental Significance Overlay or an alternative form of protection for areas of significant remnant vegetation and revegetation plots which are not directly associated with Moreland's waterways.
- 2.3. Consideration of means for providing information to land owners in relation to their potential obligations under the Aboriginal Heritage Act.

Conclusion

The City of Moreland, whilst highly urbanised, contains a number of areas of remnant habitat which are of national and state significance. Revegetation works in some areas have also been sufficiently successful to result in their now being of state significance. Whilst this is encouraging, significant vegetation patches continue to be under threat from development. The loss and degradation of these areas have implications for the survival of native fauna, as well as for the health and wellbeing of people living and visiting our City. Conversely, maintenance and improvement to areas of habitat significance has the potential to benefit both people and native fauna.

Private land has an important role to play in providing habitat: maintenance of existing remnant vegetation patches; planting of indigenous species; avoiding the use of weed species; and the appropriate siting and design of development all have the potential to contribute to the environmental significance of the creek corridors.

This review has found that use of the Environmental Significance Overlay to protect areas along the Merri and Moonee Ponds Creeks and their tributaries is appropriate, but that modifications are required to both the extent and wording of the existing controls within the Moreland Planning Scheme. An expansion of the Overlay to include additional areas of environmental significance is also warranted.