West Gippsland
Catchment Management Authority

Waterway Management Plan Guidelines for Urban Developments in Gippsland

January 2024

CONTENTS

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ACKNOWLEDGEMENT OF COUNTRY

We acknowledge and pay our respects to the Traditional Owners of the region, the Gunaikurnai, the Bunurong, the Boonwurrung and the Wurundjeri peoples, their rich culture and spiritual connection to Country.

We also acknowledge the responsibility to care for Country of Aboriginal and/or Torres Strait Islander Peoples and organisations in Natural Resource Management and pay respects to Elders, past, present and emerging.

DEFINITIONS

TERM	DEFINITION
1% AEP	*The 1% AEP (Annual Exceedance Probability) is a measure of the likelihood of a flood event occurring in any given year. It is defined as the probability that a flood of a given magnitude will occur within a period of one year. It has an average recurrence interval of 100 years and is often referred to as a 1 in 100 year flood event.*
Bushfire Hazard	*'A source of potential harm or a situation with a potential to cause loss (DELWP, 2020[3]).'*
Ecological Vegetation Class (EVC)	*'Ecological Vegetation Classes (EVC) are the standard unit for classifying vegetation types in Victoria. EVCs are described through a combination of floristics, lifeforms and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities (i.e. lower level in the classification) that occur across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating* (DELWP, 2020[2]).'
'Edge Effects'	'Edge effects' are changes in biodiversity that occur at the boundary between two distinct ecosystems. Light, wind, heat, cold and weed exposure are normally greatest at the edge of a revegetated buffer zone where the buffer zone adjoins a grass/developed area.
Hiko Cell	90ml plant growing cell referred to as a 'hiko cell'.
Revegetation	'*Establishment of native vegetation to a minimum standard in formerly cleared areas, outside a remnant patch* (DSE 2006, p. 2).'
Riparian Land	Land that adjoins rivers, creeks, estuaries, lakes and wetlands. Riparian land is often referred to as 'frontage'. (DEPI, 2013)
Storm Event	This is defined as a 1 in 3 month event.
Tubestock	Tubestock refers to small round or square plant growing tubes. Typically 200ml or 550ml tubestock are used in waterway planting.
Waterway	Waterways are named or unnamed, permanent or seasonal, and range in size from a river to a natural depression. Designated waterways are declared under the *Water Act 1989.*
Water Sensitive Urban Design	*'Integrating the urban water cycle into urban design to minimise environmental damage and improve recreational and aesthetic outcomes* (DELWP, 2016).'

ACRONYMS

BAL	Bushfire Attack Level
BMO	Bushfire Management Overlay
BPA	Bushfire Prone Area
CFA	Country Fire Authority
CHMP	Cultural Heritage Management Plan
CMA	Catchment Management Authority (In Gippsland, this will be the West Gippsland Catchment Management Authority or East Gippsland Catchment Management Authority, depending on the location)
DEECA	Department of Energy, Environment and Climate Action
DTP	Department of Transport and Planning
EGCMA	East Gippsland Catchment Management Authority
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
EVC	Ecological Vegetation Class
EVCs	Ecological Vegetation Classes
FFG Act	*Flora and Fauna Guarantee Act 1988*
FO	Floodway Overlay
FRV	Fire Rescue Victoria
GGE	Giant Gippsland Earthworm *(Megascolides australis)*
LSIO	Land Subject to Inundation Overlay
RAP	Registered Aboriginal Party
RCS	Regional Catchment Strategy
NBC	Narracan Burrowing Crayfish *(Engaeus phyllocercus)*
WBC	Warragul Burrowing Crayfish *(Engaeus sternalis)*
WGCMA	West Gippsland Catchment Management Authority
WMP	Waterway Management Plan
WSUD	Water Sensitive Urban Design

Waterway Management Plan Guidelines

Part 1: Introduction

1.INTRODUCTION

In the future, significant changes, including expanding urban development, climate change and increased visitation, are likely to place additional pressure on Gippsland's waterways and floodplains. Developments that are designed to protect and enhance the environmental, cultural and social values of waterways help to counter these pressures and achieve healthy, well-managed waterways.

Healthy, well-managed waterways contribute to thriving communities and support a prosperous regional economy for Gippsland. The development of well-considered Waterway Management Plans also assists municipalities in planning future maintenance and renewal programs to better manage waterways into the future.

1.1 WHAT IS A WATERWAY

Waterways are named or unnamed, permanent or seasonal, and range in size from a river to a natural depression. Designated waterways are declared under the *Water Act 1989.* Waterways do not need to have permanent or flowing water to be considered waterways under the *Water Act 1989*.

1.2 PURPOSE OF THE GUIDELINES

The Waterway Management Plan Guidelines for Urban Developments have been developed to provide clear direction to those developing land containing waterways. The Guidelines detail what needs to be considered and incorporated in a Waterway Management Plan.

The purpose of the Guidelines is to assist landowners, developers, planners, designers and engineers in preparing waterway management plans that meet the requirements of the Responsible Authority. The Responsible Authority requires the following information to be addressed in the Waterway Management Plan:

a) Details of the existing environmental values;

b) Details of any initial stablilisation and vegetation works;

c) A landscape plan for revegetation of land within a 30 metre buffer either side of the waterway, including a species list and proposed density of the plantings. The vegetation must be representative of the Ecological Vegetation Class for the site. Any area required to be cleared of vegetation to create defendable space must not encroach into the required revegetation within the waterway buffer; and

d) A maintenance activities schedule detailing the establishment and ongoing maintenance requirements, frequency of maintenance activities and handover benchmarks .

The Guidelines outline the basic requirements and provide examples and template tables to assist with preparation of the key elements of a waterway management plan, along with links to sources of more detailed information. This Guideline does not attempt to include technical information. Technical information, current strategies, legislation and best practice management of the environment and stormwater need to be addressed through the planning and detailed design process for a new development and/or subdivision.

1.3 APPLICATION OF THE GUIDELINES

The West Gippsland Catchment Management Authority (WGCMA) and East Gippsland Catchment Management Authority (EGCMA) are two of ten Catchment Management Authorities (CMAs) throughout Victoria established under the *Catchment and Land Protection Act 1994* and the *Water Act 1989*. The Gippsland region covered by these two catchment management authorities extends over 40,000 square kilometres. A primary aim of the WGCMA and EGCMA is to achieve improved catchment health across Gippsland.

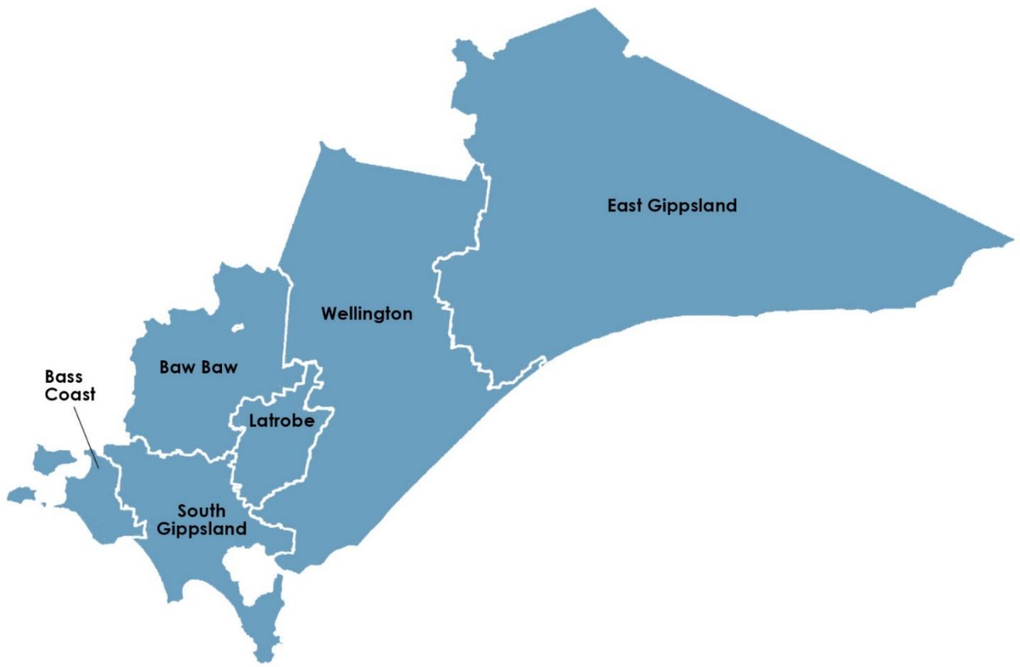
The WGCMA and EGCMA are floodplain management authorities and referral authorities for local government areas within the West and East Gippsland Catchments. They are referral authorities for various types of development applications where floodplains and/or waterways are present.

The approval of a Waterway Management Plan for any designated waterway within a development or subdivision site is required as a condition of the planning permit, prior to commencement of any works related to the subdivision or development. These Guidelines also apply to newly constructed waterways, including assets such as wetlands, sediment ponds and vegetated swales.

The Guidelines have been prepared to provide guidance for development occurring in Gippsland municipalities, including Bass Coast, South Gippsland, Baw Baw, Latrobe, Wellington and East Gippsland, as shown on Figure 1.

These Guidelines apply to urban developments and subdivisions in urban areas that result in the creation of a public reserve containing a waterway. For small developments where the waterway is contained within private ownership or privately managed, the *Waterway Management Plan Guidelines for Private Land in Gippsland* apply.

Figure 1: The Guidelines apply across the six Gippsland municipalities



1.4 PLANNING FRAMEWORK

Planning Schemes set out the Planning Policy Framework with state, regional and local objectives and strategies. There are numerous objectives within the Planning Policy Framework (PPF), relating to waterway and floodplain management. Responsible authorities must consider the effects that land use and development may have on the environment, including waterways. The following objectives are contained in the PPF, and must be considered, where applicable:

- ***To assist the protection and conservation of Victoria's biodiversity*** (12.01-1S – Protection of the Marine and Coastal Environment).
- ***To protect and enhance waterway systems including river and riparian corridors, waterways, lakes, wetlands and billabongs*** (12.03-1S River and Riparian Corridors, Waterways, Lakes, Wetlands and Billabongs)
- ***To minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning*** (13.01-1S Natural Hazards and Climate Change)
- ***To plan for and manage the potential coastal impacts of climate change.*** (13.01-2S Coastal Inundation and Erosion)
- ***To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*** (13.02-1S Bushfire Planning)
- ***To protect life, property and community infrastructure from flood hazard, protect the natural flood capacity of rivers, streams and floodways, protect the flood storage function of floodplains and waterways and protect floodplain areas of environmental significance or of importance to river health.*** (13.03-1S Floodplain Management)
- ***To protect areas prone to erosion, landslip or other land degradation processes.*** (13.04-2S Erosion and Landslip)
- ***To assist the protection and restoration of catchments, waterways, estuaries, bays, water bodies, groundwater, and the marine environment.*** (14.02-1S Catchment Planning and Management)
- ***To ensure the protection and conservation of places of Aboriginal cultural heritage significance.*** (15.03-2S Aboriginal Cultural Heritage)
- ***To establish, manage and improve a diverse and integrated network of public open space that meets the needs of the community.*** (19.02-6S Open space)
- ***To sustainably manage water supply and demand, water resources, wastewater, drainage and stormwater through an integrated water management approach.*** (19.03.3S Integrated Water Management)

One of the applicable strategies detailed at Clause 14.02-1S Catchment Planning and Management is to:

- *Retain natural drainage corridors with vegetated buffer zones at least 30 metres wide along each side of a waterway 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.*

A Waterway Management Plan (WMP) is a requirement set by the Catchment Management Authorities to demonstrate how a subdivision and/or development responds appropriately to the Planning Policy Framework (PPF) and provides a suitable long-term waterway management outcome.

Another Clause applicable to the development of waterway management plans is Clause 71.02 Operation of the Planning Framework. Clause 71.02-3 outlines the principles for integrated decision-making. In bushfire prone areas, including areas covered by the Bushfire Management Overlay, achieving good waterway management outcomes is possible if vegetation lifeform, riparian buffer widths and bushfire management setbacks are considered in an integrated manner very early in the planning process so that an appropriate design response can be achieved.

APPLICABLE LEGISLATION AND REGULATIONS:

- ***Wildlife Act 1975***
- ***Crown Land (Reserves) Act 1978***
- ***Planning and Environment Act 1987***
- ***Flora and Fauna Guarantee Act 1988***
- ***Water Act 1989***
- ***Building Act 1993 (in relation to bushfire management)***
- ***Native Title Act 1993 (Cth)***
- ***Catchment and Land Protection Act 1994***
- ***Coastal Management Act 1995***
- ***Environmental Protection and Biodiversity Conservation Act 1999***
- ***Environment Protection Act 2017***
- ***Aboriginal Heritage Act 2006***
- ***Aboriginal Heritage Regulations 2018***
- ***Traditional Owners Settlement Act 2010***
- ***Climate Change Act 2017***
- ***Marine and Coastal Act 2018,*** and
- International agreements such as ***Ramsar Convention on Wetlands***

1.5 PROCESS FOR DEVELOPING A WATERWAY MANAGEMENT PLAN

On sites where waterways are present, an appropriate development design response should consider a range of factors, including water quality impacts, erosion control, flora and fauna protection, cultural heritage protection, recreation, ongoing maintenance and appropriate management of bushfire risk to safeguard nearby residents, workers and visitors.

Best outcomes are achieved when waterway management and good design response are considered early in the development process.

In most instances, developers or landowners will need to engage a suitably qualified environmental/biodiversity consultant, landscape designer or landscape architect to prepare a Waterway Management Plan in accordance with these Guidelines. If located in the Bushfire Prone Area, including the Bushfire Management Overlay, a bushfire planning consultant may also need to have input into the development of the Waterway Management Plan in the early stages.

Figure 2 shows the stages in the development of a Waterway Management Plan.

**NOTE - In some instances, such as small developments with few site constraints/risks, it may be acceptable to prepare a Waterway Management Plan following approval of the planning permit. However, in most instances Council and the relevant CMA will request a Concept Waterway Management Plan to be provided at the application stage to accompany the development plans and other supporting documents such as a landscape plan, stormwater management strategy, fauna and fauna assessment, native vegetation offset plan and bushfire planning report. The Concept Waterway Management plan helps demonstrate that the objectives of the Planning Scheme have been achieved and reduces the likelihood of having to make changes to the subdivision/development layout after the planning permit has been issued.

FIGURE 2: Waterway Management Plan Development and Approvals Process

STEP 1 - PRE-APPLICATION MEETING

Joint site visit with Council and WGCMA/EGCMA to discuss site-specific waterway management issues and define the end-state bushfire hazard

STEP 2 - PREPARE A CONCEPT WATERWAY MANAGEMENT PLAN

This step occurs during preparation of the design for the development/subdivision. The Concept Waterway Management Plan is to be lodged with the Planning Permit Application**

STEP 3 – PLANNING PERMIT ISSUED

If the Concept Waterway Management Plan is satisfactory and a planning permit is issued, one of the conditions placed on the permit will be a requirement for a Waterway Management Plan to be prepared to the satisfaction of the responsible authority. The Responsible Authority will refer the WMP to the relevant CMA for comment prior to approval.

STEP 4 – PREPARE THE WATERWAY MANAGEMENT PLAN

The Waterway Management Plan should address all relevant planning permit conditions. At this point, the management considerations of the Waterway Management Plan and detailed landscape and engineering design must inform each other.

STEP 5 – OBTAIN WORKS ON WATERWAY PERMIT

Approval of Waterway Management Plan prior to obtaining a Works on Waterway Permit or commencement of any construction works

STEP 6 – CONSTRUCTION

Practical Completion (Hold Point – Inspection and Approval Required)

2 Year Maintenance Period

Amend the Waterway Management Plan, where required, if any adaptive management improvements are made during the maintenance period.

Final Completion and Handover of reserve, including transfer of management responsibilities in accordance with the approved Waterway Management Plan,to Council (Hold Point – Inspection and Approval Required)

Waterway Management Plan Guidelines

Part 2: Objective and Principles

2. OBJECTIVE AND PRINCIPLES

2.1 WHAT IS THE OBJECTIVE OF A WATERWAY MANAGEMENT PLAN?

Waterway Management Plans aim to improve the quality of management along waterways. Waterway Management Plans are prepared as part of integrated planning, design and management of new open spaces along waterway corridors and constructed water sensitive urban design (WSUD) assets.

The key objective of a Waterway Management Plan is to enhance the ecological health of the waterway. The ecological health of the waterway is influenced by a range of factors, including natural drainage function, in-stream and riparian habitat, wildlife corridors, extent of erosion and level of pollution in surface runoff from adjacent land uses.

Given that Waterway Management Plans are often prepared for urban sites they must also provide a good balance between environmental outcomes and community benefits, such as recreation, cultural heritage protection and risk management. Waterway management needs to be resilient enough to ensure these ecological and social aspects of a waterway system can function effectively together, without diminishing the ecological health of the waterway.

2.2 PRINCIPLES

The following principles need to be considered when preparing a Waterway Management Plan in Gippsland:

1. Biodiversity (Flora and Fauna)

- Identify, protect and enhance the overall extent and condition of native habitats to improve biodiversity conservation and land and water resource outcomes. This involves enhancing remnant native vegetation, where it is being protected, and revegetating the riparian land within 30m of the edge of the waterway. These vegetated areas are referred to as 'buffer zones'.
- Manage human impacts on biodiversity values while acknowledging the importance of interaction with the natural environment to health and wellbeing. Improve community understanding and appreciation of intrinsic biodiversity and values of waterways.
- Identify and eradicate weeds prior to commencement of construction or revegetation works and ensure invasive weeds species are not planted within the development.
- Refer to and incorporate the recommendations of relevant flora/fauna assessments in instances where threatened species have been located on the site.
- Ensure all new planting within 30m of the waterway, wetland or identified conservation areas is undertaken using indigenous species of local provenance consistent with the prevailing Ecological Vegetation Class (EVC), or indigenous species identified by an assessment of the local area by a conservation expert.
- Promote revegetation retention, planting and rehabilitation in areas prone to erosion. Include appropriate ground coverings to reduce erosion and supress weeds. Ground coverings include biodegradable jute matting, jute mesh, coir logs, and/or suitable landscape mulch approved by Council.
- Minimising the amount of physical disturbance to existing waterways is preferred in most locations. Realigning waterways and carrying out earthworks near waterways has the potential to increase soil erosion, decrease opportunities for regeneration of plants and result in detrimental impacts on water quality and biodiversity.

2. Safety of Visitors

- Balance the requirements of vegetation retention and revegetation with the need to protect sight lines to and from the public realm and along pathways, to ensure adequate passive surveillance and promote good perceptions of safety. **Use plants to create natural barriers to high-risk areas, including areas with deep water, fast flowing water, and steep batters.**

3. Recreation and Amenity

- Provide opportunities for community access to waterways, recreation (passive and active) and tourism, without compromising the natural environment.

4. Cultural Heritage

- Acknowledge and respect cultural heritage and connection to Country for Gunaikurnai, the Bunurong, the Boonwurrung and the Wurundjeri Peoples. Conserve and protect these values through careful design and siting of infrastructure adjacent waterways.
- Where required, obtain a Cultural Heritage Management Plan (CHMP) approved under the *Aboriginal Heritage Act 2006* and ensure that the Waterway Management Plan aligns with the recommendations of the relevant Cultural Heritage Management Plan.

5. Bushfire Risk

- Proactively plan and design new development and subdivisions that are responsive to the site constraints and end-state bushfire hazard and minimise the risk to people from bushfire.
- Ensure new urban development setbacks are sufficient to allow for the waterway to be fully restored to the prevailing EVC.

6. Flood Risk

- Where a portion of the open space reserve containing the waterway is subject to flooding, the Waterway Management Plan shall provide flood mapping and define flood risk areas.

7. Infrastructure

- Provide vehicle crossovers and tracks within reserves to ensure adequate access for maintenance activities such as weed control, mulching, pruning/thinning and clean out of constructed WSUD assets. Design of these access points and tracks should ensure gradients are in accordance with the Infrastructure Design Manual or relevant Council standard, where required.
- In urban locations, provide adequate waste and public amenities infrastructure to ensure waterways remain free from waste.
- Utilise high quality durable materials that require replacement less frequently and can better withstand natural events such as fire and flood reducing lifetime maintenance costs.
- Roads or paths may cross waterways, subject to a separate approval, but should occupy the minimum practical area possible.

8. Climate Change

- Consider the risks associated with climate change in planning and management decision making processes and site and design development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards.
- Use durable construction materials that can adapt to the anticipated increase in hazards including sea level rise.

9. Maintenance

- Consider ongoing maintenance requirements and responsibilities and prepare a waterway management activities table to support the Waterway Management Plan.

Waterway Management Plan Guidelines

Part 3: Preparing the Waterway Management Plan

3.PREPARING THE WATERWAY MANAGEMENT PLAN

3.1 EXISTING CONDITIONS

The starting point for any Waterway Management Plan involves a thorough site analysis and preparation of an Existing Conditions Plan.

The existing conditions plan informs the planning and development of the waterway management plan.

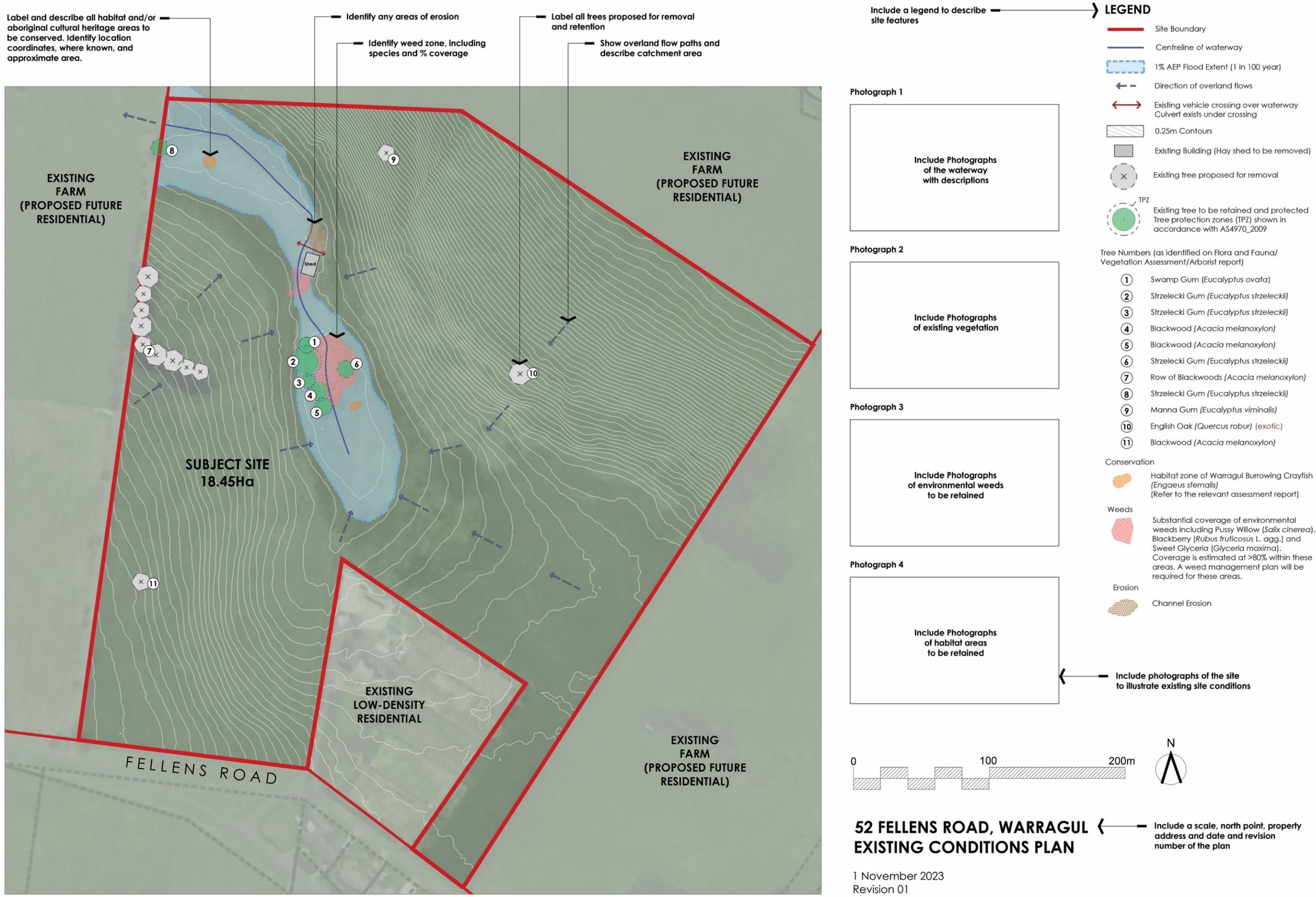
The existing conditions plan should identify, describe and include accurate mapping and site photos of key features including:

- Any existing waterways and key features of these waterways, such as channels, saturated zones, dams, crossing points, connecting drains, overland flow paths and areas of erosion.
- Topography (levels and contours) of the development site.
- Existing buildings, fences or assets, such as paths, bridges, easements and service infrastructure.
- Existing vegetation, including a description of any significant species including EVC, condition of vegetation and percentage cover.
- Identification of vegetation proposed for removal and/or retention, with tree protection zones clearly identified for trees being retained. Tree protection zones are to be provided in accordance with AS4970:2009.
- A description of weeds present and percentage cover, including any existing declared noxious weeds listed under the *Catchment and Land Protection Act 1994*.
- Any significant species or habitats for species or communities listed under the *Environmental Protection and Biodiversity Conservation Act 1999* or *Flora and Fauna Guarantee Act 1988*.
- Adjoining land uses.

The existing conditions are to be discussed at the joint site visit with the relevant Catchment Management Authority and Council prior to preparation of the Waterway Management Plan. Refer to Step 1 at Figure 2.

A sample existing conditions plan is provided at Figure 3.

Figure 3: Example of an Existing Conditions Plan



3.2 WATERWAY MANAGEMENT ZONES

WHERE DOES THE '30 METRE' VEGETATED BUFFER DERIVE FROM?

Designing adequately sized reserves helps protect waterways and ensure sufficient areas of the riparian zone contain vegetated buffers. As identified in the Planning Policy Framework at Clause 14.02-1S Catchment Planning and Management, the preferred width for a waterway corridor is 30 metres wide along each side of a waterway.

The reference point for calculating the 30 metre setback is normally the 'top of bank' or edge of saturated zone. The 'top of bank' can be defined as the break of slope from the river/creek or stream bank to surrounding land. (MW, 2013, p. 7) The edge of the saturated zone can normally be visualised on site by the floristic changes between species that have a greater tolerance to saturation and those that do not. In some instances an alternative reference point such as a hydraulic measurement may be required to determine the edge of the saturated zone. (MW, 2013, p. 7)

The purpose of the 30 metre vegetated buffer zone on each side of the waterway is for the protection and restoration of the waterway to:

- Maintain the natural drainage function of the waterway.
- Support a diverse range of native plants and animals, with adequate space for in-stream and riparian habitat and wildlife corridors.
- Provide important ecosystem services, such as carbon filtration.
- Provide sufficient space for the various vegetation lifeforms to be incorporated into revegetation planting. Providing varied vegetation lifeforms increases biodiversity and habitat, assists in slowing stormwater runoff into the waterway and helping to minimise stormwater pollution and erosion of the waterway. Any revegetation planting along the waterway should be representative of the Ecological Vegetation Class for the site. In locations where little or no existing native vegetation remains, the pre-1750s EVC should be referred to.
- Provides sufficient space for overstorey canopy trees which help shade waterways, reduce algal blooms and reduce the urban heat island effect.

DETERMINING THE EXTENT AND DESIGN OF WATERWAY MANAGEMENT ZONES

Following the completion of the site visit and preparation of the existing conditions plan, it is possible to determine the extents and design layout of the waterway management zones and development setbacks. The type of waterway management zone may vary between developments, depending on the nature of the existing waterway, the site conditions, whether any constructed WSUD assets are proposed and presence of significant flora and fauna.

The design of each waterway management zone needs to demonstrate an appropriate response to existing environmental values and site considerations, such as the need for stabilisation of any erosion area. The waterway management plan shall include a species list and proposed density of plantings for each zone. Figure 4 shows an example of a waterway management plan that includes typical waterway management zones and Figure 5 shows a typical cross-section with a preferred waterway management and development setback that consider and respond to bushfire risk. Appendix 2 shows an example of a plant schedule and Appendix 3 provides example planting guides for each Council.

The following provides a description of typical waterway management zones included in waterway management plan:

Lower Bank/Channel Zone

This is the lower bank or wet channel section of a waterway. This area will be subject to frequent inundation after local rainfall and its width may vary considerably between sites, depending on topography, depth, quantity and velocity of water flows and bank erosion over time.

Overgrowth of Cumbungi (*Typha spp*.), Common Reed (*Phragmites australis*), Reed Sweet Grass (*Glyceria maxima)* and Willows such as Pussy Willow (*Salix cinerea)* are common in the lower bank/channel zone particularly along waterways on cleared farmland. Control of naturally occurring *Typha spp.* and *Phragmites australis* as well as exotic weeds is often required.

Planting in this zone will depend on the type of watercourse, for example the revegetation of the bank of a river with permanent water flows will be different to that of a swamp with seasonal flows. The density of planting will depend on if the planting is infill planting to areas of existing native vegetation, or new revegetation. Planting is normally achieved using 200ml tubestock and 90ml hiko cells*.

Wetland Zone

This may be a natural wetland or a constructed wetland. The wetland zone may include ephemeral marsh, shallow marsh, deep marsh and submerged marsh, typically subject to water depths between 0-700mm but potentially drying out in summer. Wetlands will often have open water pools/deeper water bodies of 0.7-2.0m.

A constructed wetland zone normally has a range of structures within it, such as inlet and outlet zones, rockwork, drop structures and bypass channels.

The shallow area of the wetland will normally have a relatively flat batter slope that is densely planted with aquatic plants which remove the fine particles and soluble pollutants. Ephemeral zones are typically planted with 200ml tubestock and 90ml hiko cells* at 6 plants per m^2. Below the water level, plant with 550ml tubestock at 2 plants per m^2.

Sediment Pond Zone/or WSUD Zone

This is a permanent open water inlet zone of a constructed wetland or drain outfall WSUD treatment or raingarden, where coarse to medium-sized sediment is trapped via settling to the bottom. The cleaner water stays at the top of the pond and flows through the outlet structure downstream for further treatment.

A sediment/sedimentation pond or basin will have a defined base layer where sediment gathers. Periodically this sediment will need to be removed and left to dry on the ground near the sediment basin (de-watering area) before being removed. It is important that the waterway management plan ensures maintenance machinery, such as excavators, will have clear access via an all-weather track. The de-watering area is normally a grassed area that will be mown when not in use.

A sediment pond normally has a range of structures within it, such as inlet and outlet zones, culverts, pits, pipes and gross pollutant traps.

Sediment ponds typically have a planted vegetated edge. The ephemeral zone is planted with 200ml tubestock and 90ml hiko cells* at 6 plants per m^2. The shallow marsh zone is planted with 550ml tubestock at 2 plants per m2.

***Note** - Not all Councils accept hiko cells. Contact Council to discuss stock supply size requirements.

Primary Buffer Zone

This is a strip/corridor of high-quality native vegetation immediately adjacent the waterway (the 'riparian zone') typically providing overstorey tree canopy cover, understorey trees, large shrubs and various understorey lifeforms including graminoids, small and medium shrubs, herbs, ground ferns and scramblers/climbers.

This zone has a minimum width of 10 metres on each side or around the perimeter of a waterway.

The end-state vegetation in a primary buffer zone is dependent on the species endemic to the local EVC. The canopy cover and mid-storey of the end-state vegetation are defining features in the classification of the end-state bushfire hazard. In many locations across Gippsland the mature-state of revegetation will be classified as 'forest' or 'woodland' according to AS3959:2018.

Secondary Buffer Zone

This is a robust buffer between the primary buffer and adjacent recreation zone or perimeter road. The secondary buffer helps to protect the primary buffer from 'edge effects', including wind, extreme temperatures and weed exposure.

The secondary buffer zone is to be high quality native vegetation typically providing overstorey tree canopy cover, and various understorey lifeforms, including graminoids, scattered small and medium shrubs, herbs, ground ferns and scramblers/climbers (DEECA, 2023). The combination of overstorey trees and low understorey vegetation, with limited shrubs, will help enhance viewlines and surveillance. The edge of the secondary buffer may meander in an out and vary in width, depending on the adjoining land uses, topography and site constraints. This zone should achieve an average width of 20 metres on each side of, or around the perimeter of a waterway.

Conservation Zone (flora, fauna, cultural heritage)

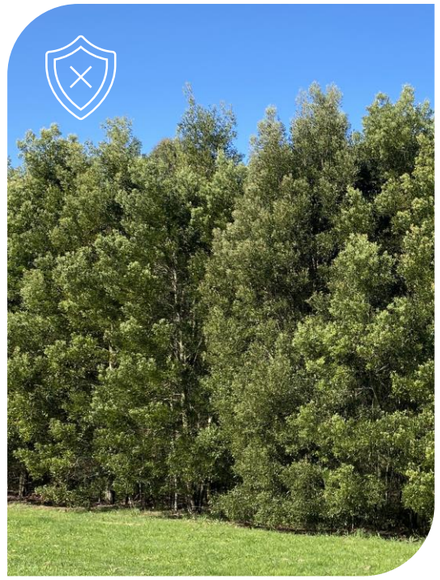
Gippsland waterways provide important habitat for a wide range of local flora and fauna. The *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Flora and Fauna Guarantee Act 1988* (FFG Act) list threatened flora, fauna and ecological communities. To help these species survive, protection of habitat will normally be required in accordance with a management plan.

Threatened species most likely to be found near waterways and flood plains in Gippsland include: Strzelecki Gum, Giant Gippsland Earthworm (GGE), Narracan Burrowing Crayfish (NBC), Warragul Burrowing Crayfish (WBC), Flinders Pygmy Perch, Dwarf Galaxias and Growling Grass Frog. Guidance on preserving habitat for many of these species is available in the form of fact sheets and guidelines. Refer to Part 4 for further information.

Water resources have important cultural values. Many waterways in Gippsland have tangible and intangible cultural heritage significance including ceremonial sites, cooking sites and middens, tools and scarred trees. In accordance with the *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2018*, developments must ensure that Aboriginal cultural heritage is protected.

The development of the waterway management plan needs to ensure areas of native vegetation, significant fauna species or cultural heritage sites are conserved in the manner identified in the relevant native vegetation assessment, biodiversity/fauna assessment and/or Cultural Heritage Management Plan. These assessments and Plans will contain recommendations for conserving these values/species. This may be through minimal ground disturbance, signage, fencing, varied planting regimes and/or maintaining the hydrological conditions of the habitat area.

TIP – A variety of lifeforms, including trees, shrubs, graminoids, herbs and climbers are required to achieve good biodiversity and water quality enhancements. Plant diversity is important in providing varied habitats. Diverse planting is better able to withstand and mitigate the impacts of climate change.



Tree Protection Zone

This is the protection zone surrounding existing trees being retained. This zone will need to be calculated in accordance with AS4970:2009 – Protection of trees on development sites.

Signage and fencing will be required prior to commencement of construction works. Protection of trees should occur in the manner identified in the relevant native vegetation assessment and/or arborist report.

Environment Weed Control Zone

This is an area containing identified high threat weeds which require specific control measures or actions. Many noxious weeds exist in Gippsland. Declared noxious weeds are listed under the *Catchment and Land Protection Act 1994*.

In locations where noxious weeds, such as Willows (most *Salix spp*.), Blackberries (*Rubus fruticosus* L. agg.), Bridal Creeper (*Asparagus asparagoides* (L.) Druce), Ragwort (*Senecio jacobaea* L.) and Angled Onion (*Allium triquetrum* L.) are present, or a significant area of the site is covered by other invasive weeds, such as Reed Sweet Grass (*Glyceria maxima*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Iris (*Iris spp.*) or other weed species, a weed management plan will need to be prepared to accompany the waterway management plan. A weed management plan is unlikely to be required at the concept stage, but will be required in order for the final waterway management plan to be approved by the responsible authority.

This weed management plan should include an ongoing weed maintenance regime to help minimise and prevent the spread of invasive weeds. Weed control measures identified in the Weed Management Plan should adopt an integrated approach to weed management utilising a range of control options other than just chemical. Mechanical control by mulching and physical removal are suitable options to consider. Where chemical control is necessary, use non-selective herbicides that are frog-friendly and safe to use near waterways and use selective herbicides sensitively to manage grassy, broadleaf and woody weeds away from waterways.

Recreation Zone

Multi-purpose reserves including assets such as playgrounds, paths, shelters, ovals, barbeques, paths and seating may be located adjacent to waterways and near WSUD assets. They need to be located a suitable distance from the vegetation buffer, conservation and tree protection zones.

The design of the recreation zone and selection of assets will normally be guided by Council.

Within the recreation zone, vegetation does not need to be representative of the EVC for the site. However, careful plant selection must ensure that no invasive weed species are selected, otherwise there is potential for these to spread to the primary and secondary buffer zones.

For the purpose of defining the end-state bushfire hazard, the recreation zone can be treated as low-threat vegetation if it is mown lawn with sparsely scattered trees and maintained in a minimal fuel condition. Subject to Council and fire service authority acceptance, this zone may contribute to the development setbacks from the end-state bushfire hazard.

Path Zone

In many instances waterways will be designed with a linear space along one or both sides, including walking, cycling or shared paths. In some locations, bridges and boardwalks may also be included. Within the path zone, the emphasis is on management of hazards to ensure cyclists and pedestrians can safely utilise this space.

The design of the path zone should look to minimise ongoing maintenance requirements by careful selection and placement of vegetation to ensure regular pruning of plants/trees, including overhanging branches is not required. The maintenance of clearance zones and sight lines along the side of path is also an important safety consideration.

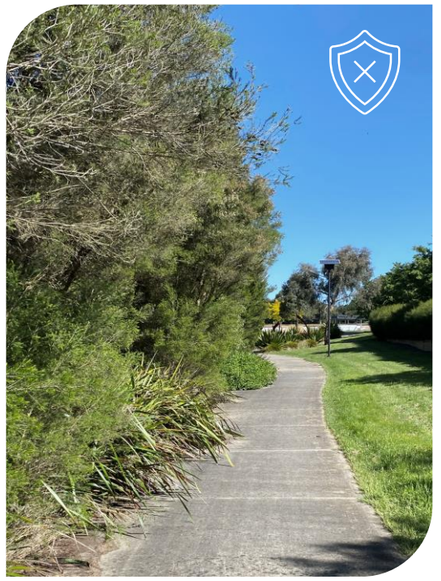
Access Zone

This is the area set aside for maintenance of assets and vegetation. The access zone may include pedestrian access to pits through revegetation areas, such as a mulched track containing no planting, or more formalised access in the form of all-weather vehicle access for clean out of WSUD assets. The materials to be used for access tracks will depend on the site location, whether the track will be subject to regular inundation and Council's relevant standards.

Service Zone

This is the area containing overhead or underground services, that are subject to the legislative control of an authority. Services may include drainage, reticulated water, gas, electricity (overhead or underground) and sewer. Service zones need to be identified on the waterway management plan as the proposed revegetation works to occur within these zones will need to be modified to comply with the relevant authority's requirements. In most cases this will mean avoiding planting of trees and shrubs within these zones. In some service zones only mown grass will be accepted, but in others small herbs, groundcovers and graminoids will be permitted.

TIP – Public spaces feel safer when there is adequate surveillance and sightlines through the open space. This can be achieved by providing a clearance area adjoining paths. Vegetation, when planted too close to path edges, reduces sightlines and increases the ongoing maintenance burden.



3.3 DEVELOPMENT SETBACKS

MANAGING BUSHFIRE RISK

In designated bushfire prone areas, bushfire management setbacks need to be considered early on in the planning process so that an appropriate design response can be achieved without compromising waterway management outcomes. On sites containing waterways, this requires defining the end-state bushfire hazard of the primary and secondary buffer zones and designing the settlement to have perimeter roads, and other bushfire mitigation measures to achieve adequate defendable space from the bushfire hazard. Recreation zone can be treated as low-threat vegetation if it is mown lawn with sparsely scattered trees and maintained in a minimal fuel condition. Extent of canopy cover and the understorey plantings define the classification of the end-state bushfire hazard in accordance with AS3959:2018.

It is important that any area required to be defendable space extends from the edge of the vegetated buffers outwards. The defendable space must not encroach or reduce the width of the primary and secondary vegetation buffer along the waterway.

Perimeter roads along the edge of the waterway reserves are the preferred design treatment as they provide increased separation between the bushfire hazard and buildings and also provide access for firefighting. Site features designed to provide a separation between the bushfire hazard and building may include sports ovals, open lawn areas and parking areas. Providing defendable space on individual lots may also assist in achieving the necessary setbacks from the bushfire hazard. In these instances, building envelopes will need to be applied to demonstrate that dwellings will not be constructed in the required defendable space.

Figure 4 shows an example of a waterway management plan that includes typical waterway management zones and Figure 5 shows a typical cross-section with a preferred waterway management and development setback that consider and respond to bushfire risk.

Further information regarding appropriate development setbacks and interface design can be found in the *Design Guidelines: Settlement Planning at the Bushfire Interface* (DELWP, 2020).

3.1 MAINTENANCE

All waterways, WSUD assets and the reserves they are located in need to be well-managed so they continue to be functional and attractive spaces with good environmental and community benefits.

Inspections and maintenance should take place on a regular basis to ensure these waterway reserves and the assets within them are fully functioning. Inspections are subject to seasonal conditions. For example, an inspection may be required after a storm event to check assets for any damage and more frequent maintenance may be required at times of peak plant growth, including spring and summer, when weed growth is more likely to be prolific.

A maintenance plan detailing the sequencing and periods of short, medium and long-term actions and the parties responsible for each action needs to accompany the waterway management plan. A sample Waterway Management Activities Schedule is provided at Appendix 1. The sample maintenance activities schedule may need to be amended to include any site-specific features, conservation zone recommendations or site environmental controls, such as silt barriers and coir logs, where applicable.

TIP – Perimeter roads are a good way of providing increased separation between buildings and the bushfire hazard. Subdivision design should ensure buildings will not be located in close proximity to vegetated areas that present a bushfire threat.

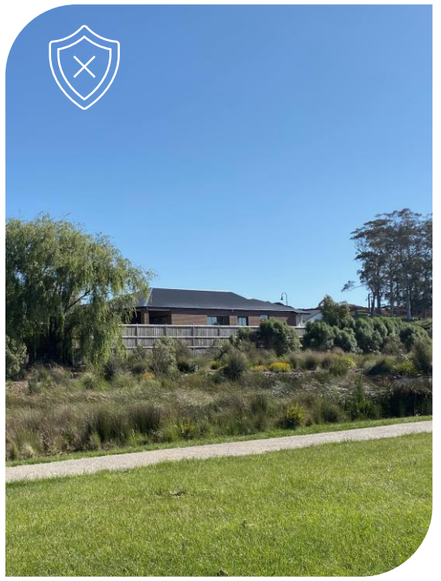
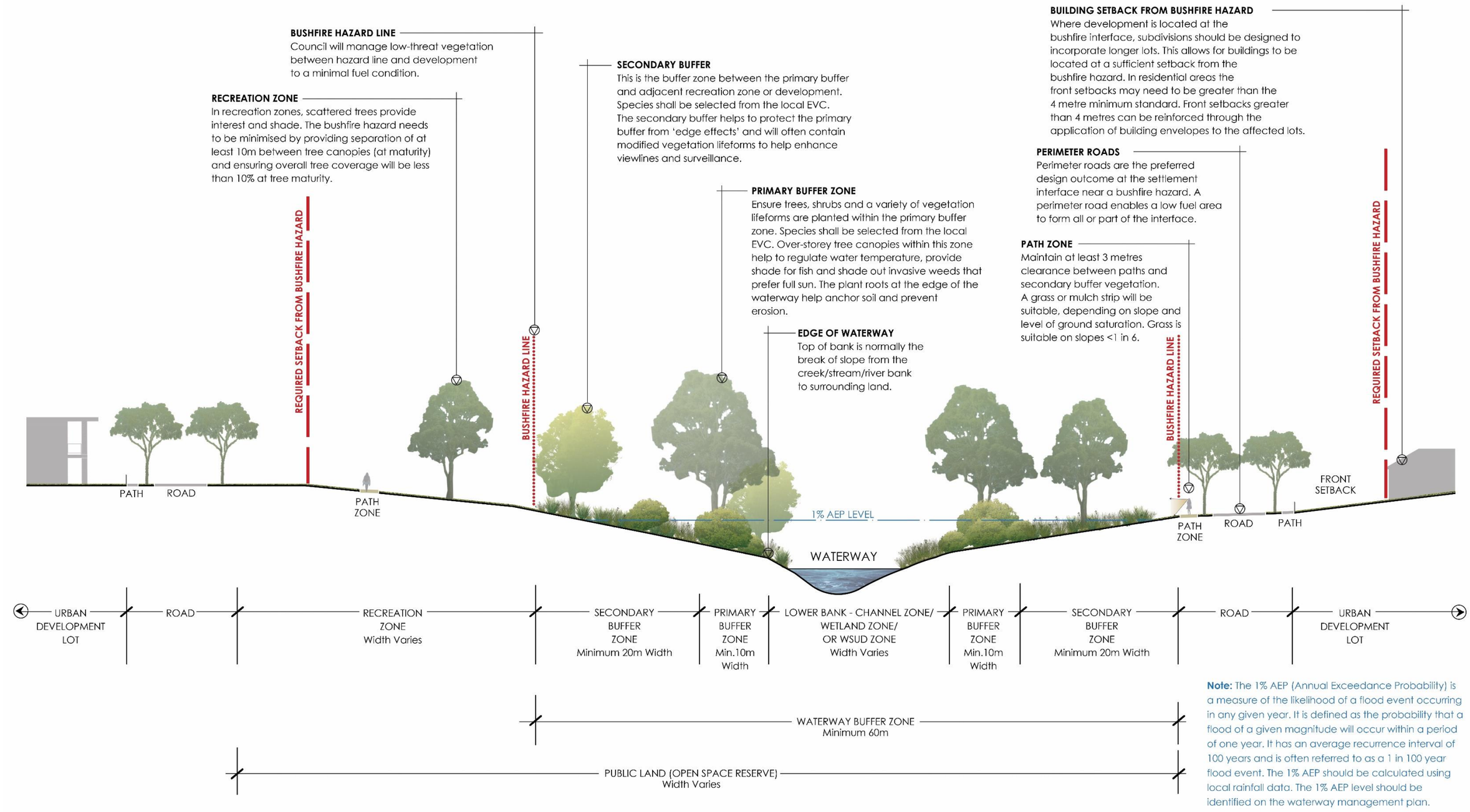


Figure 4: Example of a Waterway Management Plan

Figure 5: Example of a Typical Waterway Cross-section within an Urban Context



Note: The 1% AEP (Annual Exceedance Probability) is a measure of the likelihood of a flood event occurring in any given year. It is defined as the probability that a flood of a given magnitude will occur within a period of one year. It has an average recurrence interval of 100 years and is often referred to as a 1 in 100 year flood event. The 1% AEP should be calculated using local rainfall data. The 1% AEP level should be identified on the waterway management plan.

Waterway Management Plan Guidelines

Part 4: Further Information and References

4. ADDITIONAL INFORMATION AND REFERENCES

4.1 WHERE TO FIND FURTHER INFORMATION?

There are a number of technical documents, strategies and other design guidelines that provide useful information for applicants. These include:

WATER AND CATCHMENT MANAGEMENT

- *West Gippsland Regional Catchment Strategy (RCS) 2021-2027 (West Gippsland Catchment Management Authority)*
- *Victorian Waterway Management Strategy (Department of Environment and Primary Industries, 2013)*
- *Water for Victoria - Water Plan (Victorian Government, 2016)*
- *Marine and Coastal Policy (Victorian State Government 2020)*
- *Marine and Coastal Strategy (Victorian State Government 2022)*
- *Victoria's Coast and Marine Environments Under Projected Climate Change: Impacts, research and priorities (Victoria State Government 2018)*
- *Waterway Corridors Guidelines for Greenfield Development Areas within the Port Phillip and Westernport Region (Melbourne Water 2013)*
- *Healthy Waterways Strategy (Melbourne Water, 2018)*
- *Planning Permit Applications in Open, Potable Water Supply Catchment Areas (Department of Sustainability and Environment, 2012)*

WATER SENSITIVE URBAN DESIGN

- *WSUD Engineering Procedures: Stormwater (Melbourne Water 2005)*
- *Infrastructure Design Manual (regularly updated, available at www.designmanual.com.au)*
- *Urban Stormwater - Best Practice Environmental Management Guidelines (Victorian Stormwater Committee, 1999)*
- *Standards and Specifications (Melbourne Water 2023, available at www.melbournewater.com.au/building-and-works/developer-guides-and-resources/standards-and-specifications)*

  **Note: These WSUD references are provided as a useful source of technical information. However, it is important to check with Council or the relevant CMA before using/referring to this information, as some aspects may not apply in Gippsland.*

WATERCOURSE AND FLOOD MAPPING

- *Earth Resources – Geovic (Watercourse Mapping layer) available at gsv.vic.gov.au*
- *Vicplan – (Zones and Overlays) available at mapshare.vic.gov.au*
- *Community Flood Portal (West Gippsland Catchment Management Authority) Available at: https://flood.wgcma.vic.gov.au/index.html*

PLANNING FOR BUSHFIRE:

- *Design Guidelines: Settlement Planning at the Bushfire Interface (DELWP, 2020)*
- *Planning Permit Applications Bushfire Management Overlay Technical Guide (DEECA 2017)*
- *AS 3959-2018 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2018)*
- *Gippsland Bushfire Management Strategy 2020 (Victorian Government)*
- *Classified Vegetation (CSIRO, 2023) (available at https://research.csiro.au/bushfire/assessing-bushfire-hazards/hazard-identification/vegetation/*

URBAN DESIGN AND SAFETY:

- *Urban Design Guidelines for Victoria (Department of Transport and Planning, available at www.planning.vic.gov.au)*

PROTECTING NATIVE FLORA AND FAUNA:

- *Ecological Vegetation Class Mapping at 1:25 000 in Gippsland (Davies, Oates and Trumbull-Ward, 2002)*
- *Protecting Victoria's Environment-Biodiversity 2037 (Victorian State Government, 2017)*
- *Giant Gippsland Earthworm Fact Sheets (available at www.giantearthworm.org.au)*
- *Warragul and Narracan Burrowing Crayfish Fact Sheets, available at www.burrowingcrayfish.com.au*
- *Guidelines for Managing the Endangered Growling Grass Frog in Urbanising Landscapes (DSE, 2010)*
- *Warragul Burrowing Crayfish Habitat Protection and Disturbance Mitigation for Planned Wetlands and Retardation Basins (Invert-Eco, May 2015)*
- *Flora and Fauna Guarantee Act 1988 Threatened List (This list is updated on a regular basis and is available at www.environment.vic.gov.au)*
- *Threatened Species under the Environmental Protection and Biodiversity Conservation Act 1999 (available at www.dcceew.gov.au)*
- *Declared Noxious Weeds List (available at agriculture.vic.gov.au)*

BIODIVERSITY MAPPING

- *NatureKit (Bioregion and EVC Mapping) available at www.environment.vic.gov.au/biodiversity/naturekit*

4.2 REFERENCES

Davies, J.B., Oates, A.M. and Trumbull-Ward, A.V. (2002) *Ecological Vegetation Class Mapping at 1: 25000 in Gippsland*, accessed online 2 December 2023.

Department of Energy, Environment and Climate Action (DEECA[1]) (2023*), Bioregions and EVC Benchmarks*, accessed online 26 October 2023 at: www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks

DEECA, (2023[2]), *Nature Kit Maps*, accessed online 28 October 2023: www.environment.vic.gov.au/biodiversity/naturekit/nk-datalists#toc__id_3_vegetation

Department of Environment, Land, Water and Planning (DELWP) (2017), *Protecting Victoria's Environment – Biodiversity 2037*. Accessed online 2 October 2023, https://www.environment.vic.gov.au/__data/assets/pdf_file/0022/51259/Protecting-Victorias-Environment-Biodiversity-2037.pdf

DELWP, (2020) *Design Guidelines: Settlement Planning at the Bushfire Interface*, accessed online 15 October 2023 at: www.planning.vic.gov.au/guides-and-resources/guides/all-guides/bushfire-policy

Department of Sustainability and Environment (DSE) (2006), *Native Vegetation Revegetation Planting Standards – Guidelines for establishing native vegetation for net gain accounting*, accessed online 28 October 2023 at: www.dse.vic.gov.au/__data/assets/pdf_file/0005/97349/NativeVeg_Reveg.pdf

Department of Transport and Planning (DTP) (2023), *Planning Schemes Online*, accessed online 2 October 2023 at: www.planning.vic.gov.au/planning-schemes/browse-planning-schemes

West Gippsland Catchment Management Authority (WGCMA) (2023), *Who we are*, accessed online 2 October 2023 at: wgcma.vic.gov.au

Victorian Government (2016) *Water for Victoria - Water Plan*, accessed online 10 October 2023 at: www.water.vic.gov.au/about-us/water-for-victoria

Victorian Government (2023) *Gippsland Bushfire Management Strategy 2020*, accessed online 10 October 2023 at: www.safertogether.vic.gov.au/__data/assets/pdf_file/0028/493534/DELWP_BushfireManagementStrategies_2020_Gippsland_rr.pdf

Victorian Coastal Council (2018), *Victoria's Coast and Marine Environments Under Projected Climate Change: Impacts, research and priorities,* accessed online 2 October 2023 VCC_Science_Panel_Report_2018_Full_32pp_WEB.pdf (marineandcoastalcouncil.vic.gov.au)

Waterway Management Plan Guidelines

Appendix 1: Waterway Management Activities Schedule

APPENDIX 1: EXAMPLE WATERWAY MANAGEMENT ACTIVITIES SCHEDULE (TEMPLATE AVAILABLE IN MS WORD)

PLAN CODE	MANAGEMENT ZONE	DESCRIPTION	ASSETS	ESTABLISHMENT MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY	HANDOVER BENCHMARK	ONGOING MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY
EW	**ENVIRONMENTAL WEED CONTROL ZONE**	Weed control is required in this zone prior to commencement of any works. It is recommended that a Weed Management Plan be prepared and incorporated into the final Waterway Management Plan. The weed management plan shall nominate control and eradication targets. The treatment of excessive reed growth in open, unshaded parts of the lower channel and in-stream areas will need to be carefully monitored and managed.	MACHINERY HYGIENE AREA Signage Fencing Wash down area, where required	MACHINERY HYGIENE AREA • Monitoring of signage and machinery hygiene measures such as wash down areas WEEDS • Control and eradication targets as nominated in the site specific weed control management plan have been met	WEEDS As per recommendations of weed management plan	WEEDS Control and eradication targets as nominated in the site-specific weed management plan have been met	WEEDS • Monitoring and implementation of mowing, machinery hygiene and spot control measures as nominated in the site-specific weed management plan	WEEDS 1 Visit annually or as required
LB	**LOWER BANK – CHANNEL ZONE**	The lower bank – channel zone of the natural waterway varies slightly in width along the existing open channel in Reserve 1 generally between 2 and 5m in width. Revegetation planting along the edges of this channel shall include aquatic and semi-aquatic herbs, sedges and rushes.	PLANTS Mass aquatic and semi-aquatic planting (4-6/m^2) EROSION CONTROL 700-800GSM biodegradable jute mat, where required	PLANTS • Plant replacement, to achieve survival target for initial planting WEEDS • Removal of litter and weeds to <1% cover • Regular weed monitoring and management	PLANTS AND WEEDS 8-10 Visits Annually	PLANTS • >95% survival of initial planting WEEDS • Removal of litter and weeds to <1% cover	WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent	WEEDS 6-8 Visits Annually
W	**WETLAND ZONE**	The constructed wetland zone includes shallow marsh, deep marsh and submerged marsh, typically subject to water depths between 0-700mm but potentially drying out in summer. The open water pools/deeper water bodies range in depth from 0.7-2.0m. The wetland will be periodically or permanently inundated with shallow water. The wetland will contain marsh planting around the perimeter. 700-800GSM biodegradable jute mat for stabilisation between extended detention (EDD) and normal water level (NWL), where required.	PLANTS Mass aquatic and semi-aquatic planting (4-6/m^2) INFRASTRUCTURE Open water/deep pools Inlet/outlet structures Pipes EROSION CONTROL 700-800GSM biodegradable jute mat, where required SIGNAGE Informational	PLANTS • Plant replacement, to achieve survival target for initial planting WEEDS • Removal of litter and weeds to <1% cover • Regular weed monitoring and management	PLANTS AND WEEDS 10-12 Visits Annually	PLANTS • >95% survival of initial planting WEEDS • Removal of litter and weeds to <1% cover INFRASTRUCTURE • For constructed infrastructure refer to site specific stormwater management plan requirements	WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent	WEEDS 6-8 Visits Annually

PLAN CODE	MANAGEMENT ZONE	DESCRIPTION	ASSETS	ESTABLISHMENT MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY	HANDOVER BENCHMARK	ONGOING MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY
S	**SEDIMENT POND ZONE/WSUD ZONE (OTHER)**	Reserve 1 contains two sedimentation basins/ponds. These are permanent open water inlet zones for drainage outfalls coming from roads within the development site. The sediment is trapped and periodically removed as part of routine maintenance. The water from these two sedimentation ponds flows to the central wetland. Any remaining sediment is periodically removed as part of routine maintenance. Erosion control measures will be incorporated into the outfalls from the sedimentation basins to minimise erosion. The sedimentation basins and the wetland will contain marsh planting around the perimeter. 800GSM biodegradable jute mat for stabilisation between extended detention (EDD) and normal water level (NWL), where required	PLANTS Mass aquatic and semi-aquatic planting (4-6/m^2) MULCH Landscape mulch approved by Council EROSION CONTROL 700-800GSM biodegradable jute mat, where required INFRASTRUCTURE Open water basins Inlet/outlet structures and pipes Gross pollutant traps Safety fencing, where required Safety signage, where required	PLANTS • Plant replacement, to achieve survival target for initial planting MULCH • Mulch top-up where required WEEDS • Removal of all litter and weeds to <1% • Regular weed monitoring and management SEDIMENT REMOVAL • Sediment removal. Refer to approved site specific stormwater management plan requirements	PLANTS, MULCH AND WEEDS 10-12 Visits Annually SEDIMENT REMOVAL Frequency as specified in approved stormwater management plan	PLANTS • >95% survival of initial planting WEEDS • Removal of litter and weeds to <1% cover INFRASTRUCTURE • For constructed infrastructure refer to site specific stormwater management plan requirements SEDIMENT REMOVAL • Where required, following testing	WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent SEDIMENT REMOVAL • Sediment removal. Refer site specific stormwater management plan requirements.	WEEDS 6-8 Visits Annually
PB	**PRIMARY BUFFER ZONE**	This is the primary buffer zone on both sides of the waterway and adjacent the wetland and sediment ponds. In some locations, the width of the primary buffer varies due to the proximity of the WSUD assets. The primary buffer has an average minimum width of 10m. The primary buffer zone along the Creek has existing native overstorey, but supplementary planting will be provided within this zone following weed removal. In areas which currently have pasture grasses or weeds, the aim is to establish a dense ground layer of vegetation with scattered overstorey indigenous tree species. Trees should be planted at a density recommended in the typical EVC for the site. This zone is part of the bushfire hazard.	PLANTS Tubestock planting into mulched beds. Planting density to be 4-6 plants/m^2 for graminoids and 2-4 plants/m^2 for shrubs and herbs MULCH Landscape mulch approved by Council EROSION CONTROL 700-800GSM biodegradable jute mat, where required	PLANTS • Tree condition check, straighten/replace stakes and ties and carry out formative pruning, where required. • Tree condition check, straighten/replace stakes and ties and carry out formative pruning, where required. • Plant replacement, to achieve survival target for initial planting MULCH • Mulch top-up where required WEEDS • Removal of litter and woody weeds to <1% cover • Regular weed monitoring and management	PLANTS, MULCH AND WEEDS 8-10 Visits Annually (Frequency of visits to be greatest during spring and summer when weed growth is significant)	PLANTS • >95% survival of initial planting WEEDS • Removal of litter and weeds to <1% cover	WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent	WEEDS 6-8 Visits Annually

PLAN CODE	MANAGEMENT ZONE	DESCRIPTION	ASSETS	ESTABLISHMENT MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY	HANDOVER BENCHMARK	ONGOING MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY
SB	**SECONDARY BUFFER ZONE**	This is the secondary buffer on both sides of the waterway. The secondary buffer has an average minimum width of 20m. Within the secondary buffer zone, the aim is to establish a dense ground layer of vegetation with graminoids, scattered small shrubs and herbs and scattered overstorey indigenous tree species, keeping the vegetation classification to 'woodland'. This zone is part of the bushfire hazard.	PLANTS Tubestock planting into mulched beds. Planting density to be 4-6 plants/m^2 for graminoids and 2-4 plants/m^2 for shrubs and herbs. Tree density and tree canopy separation to be in accordance with the end state vegetation classification of 'woodland', where applicable. MULCH Landscape mulch approved by Council. EROSION CONTROL 700-800GSM biodegradable jute mat, where required	PLANTS • Where vegetation within this zone has been classified as 'woodland', maintenance of the zone, including removal of tree and shrub regrowth and pruning of lower branches, will need to ensure this vegetation classification is maintained. • Plant replacement, to achieve survival target for initial planting MULCH • Mulch top-up where required. WEEDS • Removal of litter and weeds to <1% cover • Regular weed monitoring and management	PLANTS, MULCH AND WEEDS 8-10 Visits Annually (Frequency of visits to be greatest during spring and summer when weed growth is significant)	PLANTS • >95% survival of initial planting • Where vegetation within this zone has been classified as 'woodland', maintenance of the zone, including removal of tree and shrub regrowth and pruning of lower branches, will need to ensure this vegetation classification is maintained WEEDS • Removal of litter and weeds to <1% cover	PLANTS • Inspect and prune tree branches and remove regrowth, where required WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent	PLANTS 1 Visit annually WEEDS 6-8 Visits Annually
C	**CONSERVATION ZONE**	The conservation zone is for the protection of Warragul Burrowing Crayfish *(Engaeus sternalis),* which is a critically endangered species. To protect the hydrological conditions of the crayfish habitat, the habitat zone shall remain undisturbed. Planting of graminoids is to occur within the habitat zone and/or 10m wide buffer zone as per the recommendation of the assessment report. No services or infrastructure are to be installed within this zone.	CONSERVATION REQUIREMENTS Conservation area identified for retention and protection. Fencing, where required. PLANTS Planting zone is graminoids only at density recommended in assessment report. MULCH Landscape mulch approved by Council, where required	CONSERVATION REQUIREMENTS • Retain hydrological conditions. • Minimise soil disturbance in this zone • No planting of trees or medium-tall shrubs. Remove regenerating trees or medium-tall shrubs • Place a temporary fence around the conservation zone during construction, in accordance with the relevant planning permit condition • Avoid entry of heavy machinery • A post construction species survey is required, in accordance with the relevant planning permit condition PLANTS • Plant replacement, to achieve survival target for initial planting MULCH Mulch top-up where required WEEDS • Removal of weeds to <1% cover • No broadscale use of herbicide. 'Spot' spraying may be required	CONSERVATION REQUIREMENTS 8-10 visits annually PLANTS, MULCH AND WEEDS 8-10 Visits Annually (Frequency of visits to be greatest during spring and summer when weed growth is significant)	PLANTS • >95% survival of initial planting. WEEDS • Removal of litter and weeds to <1% cover.	PLANTS • Inspect and prune tree branches and remove regrowth, where required WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent	WEEDS 6-8 visits annually

PLAN CODE	MANAGEMENT ZONE	DESCRIPTION	ASSETS	ESTABLISHMENT MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY	HANDOVER BENCHMARK	ONGOING MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY
TPZ	**TREE PROTECTION ZONE**	This is the protection zone surrounding the nine existing trees being retained. This zone has been calculated in accordance with AS4970:2009 – Protection of trees on development sites. Signage and fencing will be required prior to commencement of construction works. Protection of trees should occur in the manner identified in the relevant native vegetation assessment and/or arborist report.	PROTECTED TREES Existing mature trees identified for retention and protection. Tree tags to be used. INFRASTRUCTURE Temporary fencing. Permanent fencing, where required. MULCH Landscape mulch approved by Council.	TREE PROTECTION REQUIREMENTS • Removal of tree protection zone fencing and signage at completion of construction works • Monitoring of remedial arboricultural works if required for public safety MULCH • Mulch top-up within TPZ, where required WEEDS • Weed control within TPZ using approved herbicide	TREE PROTECTION REQUIREMENTS 1 Visit Annually MULCH AND WEEDS 8-10 Visits Annually	TREE PROTECTION REQUIREMENTS • Aluminium tree tag in place • Supply of annual arboricultural inspection records MULCH • Mulch cover topped up to 75mm WEEDS • Removal of litter and weeds to <1%	TREES PROTECTION REQUIREMENTS • Arboricultural inspection where located within other zones WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent	TREES PROTECTION REQUIREMENTS As per Council's tree inspection schedule
R	**RECREATION ZONE**	Area used for passive recreation. The recreation zone is predominantly scattered trees into exotic grass. Grass is to be maintained at height of no greater than 100mm for bushfire management purposes. Seating is to be incorporated. This zone forms part of the setback for development from the bushfire hazard.	GRASS Maintained grass areas (regularly mown) INFRASTRUCTURE Furniture Signage (directional and safety) Fencing Gates Bollards Structures	GRASS • Planted with standard exotic grass seed blend, as per Council's standard mix for recreation areas. • Mowing and edging to maintain grass between 5-10cm high. • Min 8 cuts spring, 8 cuts summer, 2 cuts autumn and 2 cuts winter WEEDS • Removal of litter and weeds of <1% STRUCTURES • Inspection of furniture and signage DRAINAGE • Drainage inspection and maintenance	GRASS Mowing, as required. Minimum 20 cuts per year, or as specified by Council WEEDS 8-10 Visits annually STRUCTURES AND DRAINAGE 1 Visit Annually	GRASS • Grass cover >95% • Grass areas cut WEEDS • Removal of litter and weeds to <1% STRUCTURES • All structures in condition as approved at Practical Completion (PC)	GRASS • Mowing and edging to maintain grass between 5-10cm high. Min 8 cuts Spring, 8 cuts Summer, 2 cuts Autumn and 2 cuts Winter STRUCTURES & DRAINAGE • Inspection of signage and furniture and maintenance • Drainage inspection and maintenance TREES • Tree condition check, straighten/replace stakes and ties and carry out formative pruning, where required • Tree inspections and lower branches removed to maintain clear sight lines WEEDS • Weed control and removal of litter	GRASS Mowing, as required. Minimum 18-20 cuts per year STRUCTURES & DRAINAGE 1 Visit annually TREES As per Council's tree inspection schedule WEEDS 6-8 visits annually

PLAN CODE	MANAGEMENT ZONE	DESCRIPTION	ASSETS	ESTABLISHMENT MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY	HANDOVER BENCHMARK	ONGOING MAINTENANCE AND MANAGEMENT CONSIDERATIONS	FREQUENCY
P	**PATH ZONE**	The path zone is a 2.5m wide concrete path extending on both sides of the waterway. The shared path connects to other paths in the development. Maintain a minimum 3.0m clearance from the edges.	PATHS Concrete Shared Path (2.5m wide)	PATHS • Path conditions inspection	PATHS 1 Visit Annually	PATHS • Paths in condition as approved at Practical Completion (PC), level with surrounding landscape and free draining • Repair/replacement of outstanding defects	PATHS • Inspection of path and maintenance	PATHS 1 Visit Annually
A	**ACCESS ZONE**	Track for maintenance vehicles. All-weather surface to Council standards Removable bollards to Council standards Where ground surface water flow is significant, or land is subject to inundation, concrete/all-weather tracks may be required by Council.	INFRASTRUCTURE All-weather width of 3.5m to 4.0m (material to be approved by Council) Removable Bollards Gates and fencing	INFRASTRUCTURE • Track conditions inspection	INFRASTRUCTURE 1 Visit Annually	INFRASTRUCTURE • Access track in condition as approved at Practical Completion (PC) • Repair/replacement of outstanding defects	INFRASTRUCTURE • Inspection of track and maintenance	INFRASTRUC-TURE 1 Visit Annually
UG **AG** **OH**	**SERVICE ZONE** **UNDERGROUND** **ABOVE GROUND** **OVERHEAD**	Proposed location for underground services including sewerage/water/electricity infrastructure. Final design subject to detailed engineering.	INFRASTRUCTURE Underground service asset PLANTS Tubestock planting into mulched beds. Planting density to be 4-6 plants/m^2 for graminoids No shrub or tree planting to occur within underground or overhead service zone. MULCH Landscape mulch approved by Council	INFRASTRUCTURE • Clearance, signage and access to pits, inspection points and other assets are maintained as per service authority requirements PLANTS • Plant replacement, to achieve survival target for initial planting MULCH • Mulch top-up where required WEEDS • Removal of litter and weeds to <1% cover • Regular weed monitoring and management	INFRASTRUCTURE 1 Visit Annually PLANTS, MULCH AND WEEDS 8-10 Visits Annually (Frequency of visits to be greatest during spring and summer when weed growth is significant)	INFRASTRUCTURE • Council and service authority requirements have been met and signed off PLANTS • >95% survival of initial planting WEEDS • Removal of litter and weeds to <1% cover	INFRASTRUCTURE • Monitoring and works as per service authority requirements PLANTS • Inspect and remove regrowth, where required WEEDS • Weed control and removal of litter • Monitor spread of weeds and control, where emergent	INFRASTRUC-TURE 1 Visit Annually WEEDS 6-8 Visits Annually

DOCUMENTATION NOTES:

Council requires all maintenance documentation be sent to council. An annual report, including site photos and benchmarks, including weeds and plants, needs to be provided to Council, and approved, in order for handover to occur.

***GENERAL NOTES**

Add any other notes here.

Waterway Management Plan Guidelines

Appendix 2: Plant Schedule

APPENDIX 2 – EXAMPLE PLANT SCHEDULE (TEMPLATE AVAILABLE IN MS WORD)

BIOREGION: Gippsland Plains (GipP)
ECOLOGICAL VEGETATION CLASSES (EVCs):
Swamp Scrub (EVC53), Plains Grassy Woodland (EVC55) and Floodplain Riparian Woodland (EVC56)

LOWER BANK-CHANNEL ZONE – APRX. 2 TO 5 METRES WIDE (Total Area = 860m²)		
PLANT SPECIES		PLANT QUANTITIES
Botanical Name	Common Name	Supply Size - Tubestock
Small Trees/Large Shrubs (Planting Density of 2 plants per m²) 10% of Area = 86m²		
Leptospermum lanigerum	Woolly Tea-Tree	86
Melaleuca ericifolia	Swamp Paperbark	86
Medium Shrubs (2-5m) (Planting Density of 2/m²) 20% of Area =172m²		
Leptospermum continentale	Prickly Tea-tree	344
Graminoids (tufted and non-tufted, various sizes) (Planting Density of 4-6 plants per m²) 50% of Area =430m²		
Baumea rubiginosa s.l.	Soft Twig-rush	239
Carex appressa	Tall Sedge	239
Carex breviculmis	Common Grass-sedge	239
Eleocharis acuta	Common Spike-sedge	239
Juncus amabilis	Hollow Rush	239
Juncus gregiflorus	Green Rush	239
Juncus procerus	Tall Rush	239
Poa labillardierei	Common Tussock Grass	239
Schoenus apogon	Common Bog-sedge	239
Ground Layer Herbs (<1m) (Planting Density of 4-6 plants per m²) 20% of Area = 172m²		
Dichondra repens	Kidney Weed	123
Hydrocotyle hirta	Hairy Pennywort	123
Lobelia anceps	Angled Lobelia	123
Lycopus australis	Australian Gypsywort	123
Lythrum salicaria	Purple Loosestrife	123
Persicaria praetermissa	Spotted Knotweed	123
Persicaria subsessilis	Hairy Knotweed	123
	Total Qty of Plants	**3,528**
	Average Density of Plants (=total qty of plants / Total Area)	**4.1/m²**

PRIMARY BUFFER - 10 METRES WIDE (Total Area = 4,365m²)		
PLANT SPECIES		PLANT QUANTITIES
Botanical Name	Common Name	Supply Size - Tubestock
Medium-Large Trees (Planting Density of 15 trees per hectare) 7 trees for 0.4365 hectares		
Eucalyptus camaldulensis	River Red-gum	3
Eucalyptus ovata	Swamp Gum	2
Eucalyptus tereticornis ssp. *mediana*	Gippsland Red Gum	2
Small Trees/Large Shrubs (Planting Density of 2 plants per m²) 20% of Area = 873m²		
Leptospermum lanigerum	Woolly Tea-Tree	873
Melaleuca ericifolia	Swamp Paperbark	873
Medium Shrubs (2-5m Height) (Planting Density of 2 plants per m²) 20% of Area = 873m²		
Bursaria spinosa	Sweet Bursaria	349
Coprosma quadrifida	Prickly Currant-bush	349
Hymenanthera dentata s.l.	Tree Violet	349
Leptospermum continentale	Prickly Tea-tree	349
Ozothamnus ferrugineus	Tree Everlasting	349
Small Shrubs/Prostrate Shrubs (<2m Height) (Planting Density of 4 plants per m²) 5% of Area = 218m²		
Bossiaea prostrata	Creeping Bossiaea	872
Graminoids (tufted and non-tufted, various sizes) (Planting Density of 4-6 plants per m²) 50% of Area = 2,183m²		
Carex appressa	Tall Sedge	2,729
Carex breviculmis	Common Grass-sedge	2,729
Poa labillardierei	Common Tussock Grass	2,729
Themeda triandra	Kangaroo Grass	2,729
Ground Layer Herbs (<1m Height) (Planting Density of 4-6 plants per m²) 5% of Area=218m²		
Acaena novea-zelandiae	Bidgee-widgee	545
Dichondra repens	Kidney Weed	545
Total Qty of Plants		**16,376**
Average Density of Plants (=total qty of plants / Total Area)		**3.8/m²**

SECONDARY BUFFER – 20 METRES WIDE (Total Area = 8,373m²)		
PLANT SPECIES		PLANT QUANTITIES
Botanical Name	Common Name	Supply Size - Tubestock
Medium-Large Trees (Planting Density of 15 trees per hectare) 13 trees for 0.8373 hectares		
Acacia mearnsii	Black Wattle	3
Allocasuarina littoralis	Black Sheoak	3
Eucalyptus camaldulensis	River Red-gum	4
Eucalyptus tereticornis ssp. *mediana*	Gippsland Red Gum	3
Graminoids (tufted and non-tufted, various sizes) (Planting Density of 4-6 plants per m²) 100% of area = 8,373m²		
Carex appressa	Tall Sedge	10,466
Carex breviculmis	Common Grass-sedge	10,466
Poa labillardierei	Common Tussock Grass	10,466
Themeda triandra	Kangaroo Grass	10,466
	Total Qty of Plants	**41,877**
	Average Density of Plants (=total qty of plants / Total Area)	**5.0/m²**
	TOTAL QUANTITY OF PLANTS FOR ALL ZONES	**61,781**

NOTES

1 This is an example of an ecological vegetation class complex that includes woodland and scrub. This is a sample template that is fictitious in nature and is not based on a true site location.

2 Ferns have been removed from the species list due to the exposed nature of the site and difficulty in establishing them in full sun. Ferns could be added at a later date, when revegetation is more established.

3 Pre-ordering of plants should take place as soon as the waterway management plan and detailed landscape plans have been approved. The lead time for sourcing and growing stock for larger projects may take up to six months.

4 Trees and medium to large shrub species are generally not permitted within 'service zones' for easements. Check with relevant authority as to what species will be approved within the specific easement.

5 Site Preparation - This step is integral for a successful survival rate of plants. Good site preparation helps the plants to establish with good early growth. Site preparation works, including weed management should be undertaken in early Autumn or early Spring (depending on whether and Autumn or Spring planting is to follow). Weed control should be carried out to reduce any competition for the new revegetation works. Details of weed control methods should be included in the Management Activities Schedule. Where easements are present within the waterway buffer, contact the service authority to determine their requirements for planting and fencing within easements. An agreement may be required with the service authority if carrying out works within the easement, such as fencing.

6 Planting - Planting of tubestock should occur in Autumn or Spring when soil moisture is adequate for good establishment. Plants should be watered before planting and soil moisture should be appropriate for good survival rate.

7 Plant Protection - The site should be stock proof with appropriate fencing and all other grazing threats should be controlled. If grazing threats (e.g. rabbits) still exist, ensure adequate protection of the tube stock with guards. Guards are the most efficient option for protection from rabbits. The best protection is provided with a ratio of 3 stakes per guard. The plants need adequate air movement and are not to be restricted by the guard. Guards should be checked twice a year and replaced where needed.

8 Weed Management - The success of the planting relies on good weed management. Herbicide Application – Approved herbicide should be applied around each plant. Plants should be kept free of smothering weeds. The guards should be removed, and weeds pulled aside and down to allow for herbicide application. Spot herbicide application should aim to maintain the 1 metre spot spraying around the plant that was carried out prior to planting. Any highly competitive weeds should be treated as a priority. Details of weed management should be included in the Waterway Management Activities Schedule.

9 Additional advice on species, planting and maintenance may be obtained from your local native plant nursery or Landcare Group.

Waterway Management Plan Guidelines

Appendix 3: Plant Species Guides for Revegetating Waterways

APPENDIX 3 – TABLE 1: BAW BAW SHIRE PLANT SPECIES GUIDE FOR REVEGETATING WATERWAYS IN URBAN DEVELOPMENTS (AVAILABLE IN MS WORD)

BIOREGIONS PRESENT IN MAIN URBAN AREAS:
Gippsland Plains (GipP)
Highland Southern Fall (HSF)
Strzelecki Ranges (Strz)

	ECOLOGICAL VEGETATION CLASSES (EVCs) COMMONLY LOCATED ALONG WATERWAYS						WATERWAY MANAGEMENT ZONE			
BAW BAW PLANT SPECIES	Lowland Forest (GipP, HSF, Strz)	Riparian Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Swampy Riparian Woodland (GipP, HSF, Strz)	Riparian Scrub (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name / **Common Name**	EVC 16	EVC 18	EVC 29	EVC 53	EVC 83	EVC 191	W &/OR S	LB	PB	SB
Medium-Large Trees										
Acacia dealbata — Silver Wattle		■	■						■	■
Acacia melanoxylon — Blackwood	■	■	■		■				■	■
Eucalyptus camphora ssp. humeana — Mountain Swam-gum					■				■	■
Eucalyptus consideniana — Yertchuk	■								■	■
Eucalyptus croajingolensis — Gippsland Peppermint	■								■	■
Eucalyptus cypellocarpa — Mountain Grey Gum			■						■	■
Eucalyptus dives — Broad-leaved Peppermint	■								■	■
Eucalyptus globulus ssp. *bicostata* — Eurabbie		■	■						■	■
Eucalyptus obliqua — Messmate Stringybark	■	■	■						■	■
Eucalyptus ovata — Swamp Gum		■			■		■	■	■	■
Eucalyptus radiata s.l. — Narrow-leaf Peppermint	■	■			■				■	■
Eucalyptus sieberi — Silvertop Ash	■								■	■
Eucalyptus strzeleckii — Strzelecki Gum		■							■	■
Eucalyptus viminalis — Manna Gum		■							■	■
Small Trees/Large Shrubs										
Bedfordia arborescens — Blanket-leaf			■						■	
Leptospermum lanigerum — Woolly Tea-Tree				■	■		■	■	■	
Melaleuca ericifolia — Swamp Paperbark				■	■		■	■	■	
Melaleuca squarrosa — Scented Paperbark						■		■	■	
Pomaderris aspera — Hazel Pomaderris		■	■						■	
Prostanthera lasianthos — Victorian Christmas-bush									■	
Medium Shrubs (2-5m)										
Acacia mucronata ssp. *longifolia* — Narrow-leaf Wattle	■								■	
Acacia verticillata — Prickly Moses		■				■			■	

BAW BAW PLANT SPECIES		Lowland Forest (GipP, HSF, Strz)	Riparian Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Swampy Riparian Woodland (GipP, HSF, Strz)	Riparian Scrub (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 18	EVC 29	EVC 53	EVC 83	EVC 191	W &/OR S	LB	PB	SB
Medium Shrubs (2-5m) (continued)											
Banksia marginata	Silver Banksia	■					■			■	
Bursaria spinosa	Sweet Bursaria					■				■	
Cassinia aculeata	Common Cassinia			■						■	
Coprosma quadrifida	Prickly Currant-bush		■	■	■	■	■			■	
Epacris impressa	Common Heath	■						■	■	■	
Leptospermum continentale	Prickly Tea-tree	■	■	■	■	■	■	■	■	■	
Leptospermum myrsinoides	Heath Tea-tree	■								■	
Olearia lirata	Snowy Daisy-bush	■	■	■						■	
Ozothamnus ferrugineus	Tree Everlasting		■				■			■	
Leucopogon lanceolatus var. *lanceolatus*	Lance Beard-heath			■						■	
Polyscias sambucifolia	Elderberry Panax			■						■	
Prostanthera lasianthos	Victorian Christmas-bush		■							■	
Pultenaea gunnii	Golden Bush-pea	■								■	
Small Shrubs/Prostrate Shrubs (<2m)											
Amperea xiphoclada var. *xiphoclada*	Broom Spurge	■					■			■	
Bauera rubioides	Wiry Bauera	■								■	
Goodenia ovata	Hop Goodenia		■	■				■	■	■	
Lomatia ilicifolia	Holly Lomatia	■								■	
Ozothamnus rosmarinifolius	Rosemary Everlasting						■			■	
Platylobium formosum	Handsome Flat-pea			■						■	
Graminoids (tufted and non-tufted, various sizes)											
Baloskion tetraphyllum	Tassel Cord Rush					■	■	■	■		
Baumea rubiginosa s.l.	Soft Twig-rush				■	■		■	■		
Baumea tetragona	Square Twig-sedge					■	■	■	■		
Carex appressa	Tall Sedge		■			■		■	■	■	■
Cyperus lucidus	Leafy Flat-sedge					■		■	■		
Dianella caerulea var. *carulea*	Paroo Lily	■		■				■	■	■	■
Dianella revoluta s.l.	Black-anther Flax-lily	■						■	■	■	■
Dianella revoluta s.s.	Black-anther Flax-lily					■		■	■	■	■
Dianella tasmanica	Tasman Flax-lily		■	■				■	■	■	■
Echinopogon ovatus	Common Hedgehog-Grass		■					■	■		
Eleocharis acuta	Common Spike-sedge				■			■	■		

BAW BAW PLANT SPECIES		Lowland Forest (GipP, HSF, Strz)	Riparian Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Swampy Riparian Woodland (GipP, HSF, Strz)	Riparian Scrub (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 18	EVC 29	EVC 53	EVC 83	EVC 191	W &/OR S	LB	PB	SB
Graminoids (tufted and non-tufted, various sizes) (continued)											
Gahnia sieberiana	Red-fruit Saw-sedge		■			■	■	■	■		
Isolepis inundata	Swamp Club-sedge		■					■	■		
Juncus gregiflorus	Green Rush				■			■	■		
Juncus pauciflorus	Loose-flower Rush					■		■	■		
Juncus planifolius	Broad-leaf Rush					■		■	■		
Juncus procerus	Tall Rush				■	■		■	■		
Joycea pallida	Silvertop Wallaby-grass	■								■	■
Lomandra longifolia	Spiny-headed Mat Rush	■	■	■		■		■	■	■	■
Microlaena stipoides	Weeping Grass	■	■	■		■				■	■
Poa australis spp. agg	Tussock Grass	■	■							■	■
Poa labillardierei	Common Tussock Grass			■	■	■		■	■	■	■
Poa tenera	Slender Tussock Grass	■	■					■	■	■	■
Schoenus brevifolius	Zig-zag Bog-sedge						■	■	■		
Themeda triandra	Kangaroo Grass					■				■	■
Triglochin procerum s.l.	Water Ribbons				■			■	■		
Xanthorrhoea minor ssp. *lutea*	Small Grass-tree	■								■	■
Ground Layer Herbs (<1m)											
Acaena novea-zelandiae	Bidgee-widgee		■	■		■				■	■
Dichondra repens	Kidney Weed		■			■		■	■	■	■
Gonocarpus tetragynus	Common Raspwort	■				■	■	■	■		
Hydrocotyle hirta	Hairy Pennywort	■	■	■		■		■	■		
Lobelia anceps	Angled Lobelia				■			■	■		
Lycopus australis	Australian Gypsywort			■	■	■		■	■		
Lythrum salicaria	Purple Loosestrife			■	■			■	■		
Persicaria praetermissa	Spotted Knotweed				■			■	■		
Viola hederacea	Ivy-leaf Violet	■	■	■				■	■	■	■
Creepers/Climbers/Scramblers											
Billardiera scandens	Common Apple-berry	■		■		■	■			■	■
Clematis aristata	Mountain Clematis		■	■						■	■
Smilax australis	Austral Sarsaparilla			■						■	■

BAW BAW PLANT SPECIES		Lowland Forest (GipP, HSF, Strz)	Riparian Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Swampy Riparian Woodland (GipP, HSF, Strz)	Riparian Scrub (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 18	EVC 29	EVC 53	EVC 83	EVC 191	W &/OR S	LB	PB	SB
Ferns											
Blechnum cartilagineum	Gristle Fern										
Blechnum nudum	Fishbone Water-fern										
Blechnum minus	Soft Water-fern										
Blechnum wattsii	Hard Water-fern										

Notes:

1 The EVCs listed in the table are most commonly found in main towns throughout the municipality. Other EVCs may apply to outlying areas/towns/specific areas. The applicable Bioregion and EVC for the site should be checked on NatureKit maps at www.environment.vic.gov.au/biodiversity/naturekit prior to finalisation of the planting list for a site.

2 In some locations the prevailing EVC will be listed as a 'complex' which may consist of a number of species from various EVCs.

3 Some species have been omitted from the list due to suitability, performance, small size, lack of commercial availability or tendency for weediness. For example, small, short-lived herbs or ground ferns that require a well-protected area under established vegetation, may be difficult to grow or will perform poorly when planted on cleared and exposed revegetation sites. *Phragmites australis* (Common Reed) is found in local EVCs, but is not recommended for new revegetation planting as it often requires regular control to stop it from taking over other plants in the same zone.

4 Pre-ordering of plants should take place as soon as the waterway management plan and detailed landscape plans have been approved. The lead time for sourcing and growing stock for larger projects may take up to six months.

5 Species selection for the 'conservation zone' are not identified in the table as the recommendations for this zone will depend on what is being conserved and recommendations for protection.

6 Species selection for the 'recreation zone' are not identified in the table as species may be selected that are not from the local EVC. For example, cultivars selected for their flowers/foliage may be chosen for this zone.

7 Within the 'service zone' trees and medium to large shrub species are generally not permitted. Check with relevant authority as to what species will be approved within this zone.

8 Plants identified for use in the 'wetland and sediment pond/WSUD Zone' will depend on the type of WSUD asset and the design. For example, wetlands are normally designed to include open water, submerged marsh, deep marsh, marsh, shallow marsh and littoral zones which all have different water depths. Plant species and their optimal growing conditions will need to be considered when selecting plants for each zone.

9 The species identified for each management zone provides a guide only. Species for each zone need to be selected based on the local Bioregion and EVC as well as the conditions of the site. For example, the primary buffer on one site may be subject to frequent inundation with wet/moist soils, yet on another site the primary buffer will have well-draining soils that are not subject to frequent inundation.

APPENDIX 3 – TABLE 2: LATROBE CITY PLANT SPECIES GUIDE FOR REVEGETATING WATERWAYS IN URBAN DEVELOPMENTS (AVAILABLE IN MS WORD)

BIOREGIONS PRESENT IN MAIN URBAN AREAS:
Gippsland Plains (GipP)
Highland Southern Fall (HSF)
Strzelecki Ranges (Strz)

	ECOLOGICAL VEGETATION CLASSES (EVCs) COMMONLY LOCATED ALONG WATERWAYS	WATERWAY MANAGEMENT ZONE

LATROBE PLANT SPECIES		Lowland Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Plains Grassy Woodland (GipP, HSF, Strz)	Floodplain Riparian Woodland (GipP, HSF)	Swampy Riparian Woodland (GipP, HSF, Strz)	Plains Grassy Forest (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Second-ary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 29	EVC 53	EVC 55	EVC 56	EVC 83	EVC 151	W &/OR S	LB	PB	SB
Medium-Large Trees												
Acacia dealbata	Silver Wattle		■			■					■	■
Acacia implexa	Lightwood					■		■			■	■
Acacia mearnsii	Black Wattle				■			■			■	■
Acacia melanoxylon	Blackwood	■	■		■	■	■				■	■
Allocasuarina littoralis	Black Sheoak				■			■			■	■
Eucalyptus bridgesiana s.l.	But But							■			■	■
Eucalyptus camaldulensis	River Red-gum				■	■			■	■	■	■
Eucalyptus camphora ssp. humeana	Mountain Swam-gum						■				■	■
Eucalyptus consideniana	Yertchuk	■									■	■
Eucalyptus croajingolensis	Gippsland Peppermint	■									■	■
Eucalyptus cypellocarpa	Mountain Grey Gum		■								■	■
Eucalyptus dives	Broad-leaved Peppermint	■									■	■
Eucalyptus globulus ssp. *bicostata*	Eurabbie		■								■	■
Eucalyptus macrorhyncha	Red Stringybark							■			■	■
Eucalyptus muelleriana	Yellow Stringybark							■			■	■
Eucalyptus obliqua	Messmate Stringybark	■	■								■	■
Eucalyptus ovata	Swamp Gum						■		■	■	■	■
Eucalyptus polyanthemos	Red Box							■			■	■
Eucalyptus radiata s.l.	Narrow-leaf Peppermint	■					■				■	■
Eucalyptus sieberi	Silvertop Ash	■									■	■
Eucalyptus tereticornis ssp. *mediana*	Gippsland Red Gum				■	■			■	■	■	■
Eucalyptus viminalis	Manna Gum					■					■	■

LATROBE PLANT SPECIES		Lowland Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Plains Grassy Woodland (GipP, HSF, Strz)	Floodplain Riparian Woodland (GipP, HSF)	Swampy Riparian Woodland (GipP, HSF, Strz)	Plains Grassy Forest (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Second-ary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 29	EVC 53	EVC 55	EVC 56	EVC 83	EVC 151	W &/OR S	LB	PB	SB
Small Trees/Large Shrubs												
Bedfordia arborescens	Blanket-leaf		■								■	
Leptospermum lanigerum	Woolly Tea-Tree			■			■		■	■	■	
Melaleuca ericifolia	Swamp Paperbark			■		■	■		■	■	■	
Melaleuca parvistaminea	Rough-barked Honey-myrtle							■			■	
Pomaderris aspera	Hazel Pomaderris		■								■	
Medium Shrubs (2-5m)												
Acacia mucronata ssp. longifolia	Narrow-leaf Wattle	■									■	
Banksia marginata	Silver Banksia	■						■			■	
Bursaria spinosa	Sweet Bursaria					■	■				■	
Cassinia aculeata	Common Cassinia		■								■	
Coprosma quadrifida	Prickly Currant-bush		■	■			■				■	
Epacris impressa	Common Heath	■							■	■	■	
Hymenanthera dentata s.l.	Tree Violet					■					■	
Leptospermum continentale	Prickly Tea-tree	■	■	■			■	■	■	■	■	
Leptospermum myrsinoides	Heath Tea-tree	■									■	
Leucopogon lanceolatus var. *lanceolatus*	Lance Beard-heath		■								■	
Olearia lirata	Snowy Daisy-bush	■	■								■	
Ozothamnus ferrugineus	Tree Everlasting					■					■	
Polyscias sambucifolia	Elderberry Panax		■								■	
Pultenaea gunnii	Golden Bush-pea	■									■	
Small Shrubs/Prostrate Shrubs (<2m)												
Acrotriche serrulata	Honey-pots							■			■	
Amperea xiphoclada var. *xiphoclada*	Broom Spurge	■									■	
Astroloma humifusum	Cranberry Heath							■			■	
Bauera rubioides	Wiry Bauera	■									■	
Bossiaea prostrata	Creeping Bossiaea				■			■			■	
Goodenia ovata	Hop Goodenia		■						■	■	■	
Hibbertia riparia	Erect Guinea-flower							■			■	
Lomatia ilicifolia	Holly Lomatia	■									■	
Phyllanthus hirtellus	Thyme Spurge							■			■	
Platylobium formosum	Handsome Flat-pea		■								■	
Platylobium obtusangulum	Common Flat-pea							■			■	

LATROBE PLANT SPECIES		Lowland Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Plains Grassy Woodland (GipP, HSF, Strz)	Floodplain Riparian Woodland (GipP, HSF)	Swampy Riparian Woodland (GipP, HSF, Strz)	Plains Grassy Forest (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Second-ary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 29	EVC 53	EVC 55	EVC 56	EVC 83	EVC 151	W &/OR S	LB	PB	SB
Graminoids (tufted and non-tufted, various sizes)												
Baloskion tetraphyllum	Tassel Cord Rush						■		■	■		
Baumea rubiginosa s.l.	Soft Twig-rush			■			■		■	■		
Baumea tetragona	Square Twig-sedge						■		■	■		
Carex appressa	Tall Sedge					■	■		■	■	■	■
Carex breviculmis	Common Grass-sedge				■				■	■	■	■
Carex inversa	Knob Sedge					■			■	■		
Cyperus lucidus	Leafy Flat-sedge						■		■	■		
Dianella caerulea var. *carulea*	Paroo Lily	■	■						■	■	■	■
Dianella revoluta s.l.	Black-anther Flax-lily	■							■	■	■	■
Dianella revoluta s.s.	Black-anther Flax-lily						■		■	■	■	■
Dianella tasmanica	Tasman Flax-lily		■						■	■	■	■
Eleocharis acuta	Common Spike-sedge			■		■			■	■		
Gahnia sieberiana	Red-fruit Saw-sedge						■		■	■		
Juncus amabilis	Hollow Rush					■			■	■		
Juncus gregiflorus	Green Rush			■					■	■		
Juncus pauciflorus	Loose-flower Rush						■		■	■		
Juncus planifolius	Broad-leaf Rush						■		■	■		
Juncus procerus	Tall Rush			■			■		■	■		
Joycea pallida	Silvertop Wallaby-grass	■									■	■
Lomandra longifolia	Spiny-headed Mat Rush	■	■				■	■	■	■	■	■
Poa australis spp. agg	Tussock Grass	■						■			■	■
Poa labillardierei	Common Tussock Grass		■	■		■	■		■	■	■	■
Poa tenera	Slender Tussock Grass	■							■	■	■	■
Schoenoplectus tabernaemontani	River Club-sedge					■			■	■		
Schoenus apogon	Common Bog-sedge				■				■	■		
Themeda triandra	Kangaroo Grass				■		■	■			■	■
Triglochin procerum s.l.	Water Ribbons			■					■	■		
Xanthorrhoea minor ssp. *lutea*	Small Grass-tree	■						■			■	■
Ground Layer Herbs (<1m)												
Acaena novea-zelandiae	Bidgee-widgee		■			■	■				■	■
Dichondra repens	Kidney Weed				■		■	■	■	■	■	■
Gonocarpus tetragynus	Common Raspwort	■					■	■	■	■		
Hydrocotyle hirta	Hairy Pennywort	■	■				■	■	■	■		
Lobelia anceps	Angled Lobelia			■					■	■		

LATROBE PLANT SPECIES		Lowland Forest (GipP, HSF, Strz)	Damp Forest (GipP, HSF, Strz)	Swamp Scrub (GipP, HSF, Strz)	Plains Grassy Woodland (GipP, HSF, Strz)	Floodplain Riparian Woodland (GipP, HSF)	Swampy Riparian Woodland (GipP, HSF, Strz)	Plains Grassy Forest (GipP, HSF, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Second-ary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 29	EVC 53	EVC 55	EVC 56	EVC 83	EVC 151	W &/OR S	LB	PB	SB
Ground Layer Herbs (<1m) (continued)												
Lycopus australis	Australian Gypsywort		■	■			■		■	■		
Lythrum salicaria	Purple Loosestrife		■	■					■	■		
Persicaria dicepiens	Slender Knotweed					■			■	■		
Persicaria praetermissa	Spotted Knotweed			■					■	■		
Viola hederacea	Ivy-leaf Violet	■	■						■	■	■	■
Creepers/Climbers/Scramblers												
Billardiera scandens	Common Apple-berry	■	■				■				■	■
Clematis aristata	Mountain Clematis		■								■	■
Smilax australis	Austral Sarsaparilla		■								■	■
Ferns												
Blechnum cartilagineum	Gristle Fern		■	■					■	■		
Blechnum wattsii	Hard Water-fern		■						■	■		

Notes:

1 The EVCs listed in the table are most commonly found in main towns throughout the municipality. Other EVCs may apply to outlying areas/towns/specific areas. The applicable Bioregion and EVC for the site should be checked on NatureKit maps at www.environment.vic.gov.au/biodiversity/naturekit prior to finalisation of the planting list for a site.

2 In some locations the prevailing EVC will be listed as a 'complex' which may consist of a number of species from various EVCs.

3 Some species have been omitted from the list due to suitability, performance, small size, lack of commercial availability or tendency for weediness. For example, small, short-lived herbs or ground ferns that require a well-protected area under established vegetation, may be difficult to grow or will perform poorly when planted on cleared and exposed revegetation sites. *Phragmites australis* (Common Reed) is found in local EVCs, but is not recommended for new revegetation planting as it often requires regular control to stop it from taking over other plants in the same zone.

4 Pre-ordering of plants should take place as soon as the waterway management plan and detailed landscape plans have been approved. The lead time for sourcing and growing stock for larger projects may take up to six months.

5 Species selection for the 'conservation zone' are not identified in the table as the recommendations for this zone will depend on what is being conserved and recommendations for protection.

6 Species selection for the 'recreation zone' are not identified in the table as species may be selected that are not from the local EVC. For example, cultivars selected for their flowers/foliage may be chosen for this zone.

7 Within the 'service zone' trees and medium to large shrub species are generally not permitted. Check with relevant authority as to what species will be approved within this zone.

8 Plants identified for use in the 'wetland and sediment pond/WSUD Zone' will depend on the type of WSUD asset and the design. For example, wetlands are normally designed to include open water, submerged marsh, deep marsh, marsh, shallow marsh and littoral zones which all have different water depths. Plant species and their optimal growing conditions will need to be considered when selecting plants for each zone.

9 The species identified for each management zone provides a guide only. Species for each zone need to be selected based on the local Bioregion and EVC as well as the conditions of the site. For example, the primary buffer on one site may be subject to frequent inundation with wet/moist soils, yet on another site the primary buffer will have well-draining soils that are not subject to frequent inundation.

APPENDIX 3 – TABLE 3: WELLINGTON SHIRE PLANT SPECIES GUIDE FOR REVEGETATING WATERWAYS IN URBAN DEVELOPMENTS (AVAILABLE IN MS WORD)

BIOREGIONS PRESENT IN MAIN URBAN AREAS:
Gippsland Plains (GipP)

	ECOLOGICAL VEGETATION CLASSES (EVCs) COMMONLY LOCATED ALONG WATERWAYS	WATERWAY MANAGEMENT ZONE

WELLINGTON PLANT SPECIES		Lowland Forest (GipP)	Swamp Scrub (GipP)	Plains Grassy Woodland (GipP)	Floodplain Riparian Woodland (GipP)	Latrobe Valley Plains Grassland (GipP)	Plains Grassy Forest (GipP)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 53	EVC55	EVC56	EVC 132	EVC 151	W &/OR S	LB	PB	SB
Medium-Large Trees											
Acacia implexa	Lightwood				■		■			■	■
Acacia mearnsii	Black Wattle			■			■			■	■
Acacia melanoxylon	Blackwood	■			■					■	■
Allocasuarina littoralis	Black Sheoak			■			■			■	■
Eucalyptus bridgesiana s.l.	But But						■			■	■
Eucalyptus camaldulensis	River Red-gum			■	■			■	■	■	■
Eucalyptus consideniana	Yertchuk	■								■	■
Eucalyptus macrorhyncha	Red Stringybark						■			■	■
Eucalyptus muelleriana	Yellow Stringybark						■			■	■
Eucalyptus obliqua	Messmate Stringybark	■								■	■
Eucalyptus ovata	Swamp Gum				■			■	■	■	■
Eucalyptus polyanthemos	Red Box						■			■	■
Eucalyptus radiata s.l.	Narrow-leaf Peppermint	■								■	■
Eucalyptus tereticornis ssp. *mediana*	Gippsland Red Gum			■	■			■	■	■	■
Small Trees/Large Shrubs											
Leptospermum lanigerum	Woolly Tea-Tree		■					■	■	■	
Melaleuca ericifolia	Swamp Paperbark		■					■	■	■	
Melaleuca parvistaminea	Rough-barked Honey-myrtle						■			■	
Medium Shrubs (2-5m)											
Banksia marginata	Silver Banksia	■					■			■	
Bursaria spinosa	Sweet Bursaria				■					■	
Coprosma quadrifida	Prickly Currant-bush		■							■	
Epacris impressa	Common Heath	■						■	■	■	
Hymenanthera dentata s.l.	Tree Violet				■					■	

WELLINGTON PLANT SPECIES		Lowland Forest (GipP)	Swamp Scrub (GipP)	Plains Grassy Woodland (GipP)	Floodplain Riparian Woodland (GipP)	Latrobe Valley Plains Grassland (GipP)	Plains Grassy Forest (GipP)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 53	EVC55	EVC56	EVC 132	EVC 151	W &/OR S	LB	PB	SB
Medium Shrubs (2-5m) (continued)											
Leptospermum continentale	Prickly Tea-tree	■	■				■	■	■	■	
Leptospermum myrsinoides	Heath Tea-tree	■								■	
Ozothamnus ferrugineus	Tree Everlasting				■					■	
Small Shrubs/Prostrate Shrubs (<2m)											
Acrotriche serrulata	Honey-pots	■					■			■	
Amperea xiphoclada var. *xiphoclada*	Broom Spurge	■								■	
Astroloma humifusum	Cranberry Heath						■			■	
Bossiaea prostrata	Creeping Bossiaea			■			■			■	
Hibbertia riparia	Erect Guinea-flower						■			■	
Phyllanthus hirtellus	Thyme Spurge						■			■	
Platylobium obtusangulum	Common Flat-pea						■			■	
Graminoids (tufted and non-tufted, various sizes)											
Baumea rubiginosa s.l.	Soft Twig-rush		■					■	■		
Carex appressa	Tall Sedge				■			■	■	■	■
Carex breviculmis	Common Grass-sedge			■				■	■	■	■
Eleocharis acuta	Common Spike-sedge		■		■			■	■		
Juncus amabilis	Hollow Rush				■			■	■		
Juncus gregiflorus	Green Rush		■					■	■		
Juncus procerus	Tall Rush		■					■	■		
Lomandra longifolia	Spiny-headed Mat Rush	■					■	■	■	■	■
Microlaena stipoides var. *stipoides*	Weeping Grass					■	■			■	■
Poa australis spp. agg	Tussock Grass	■					■			■	■
Poa labillardierei	Common Tussock Grass		■		■			■	■	■	■
Microlaena stipoides	Weeping Grass	■		■	■			■	■	■	■
Rytidosperma setaceum Syn. *Austrodanthonia setacea*	Bristly Wallaby-grass					■				■	■
Schoenus apogon	Common Bog-sedge			■		■		■	■		
Themeda triandra	Kangaroo Grass			■		■	■			■	■
Triglochin procerum s.l.	Water Ribbons		■					■	■		
Xanthorrhoea minor ssp. *lutea*	Small Grass-tree	■					■			■	■

WELLINGTON PLANT SPECIES		Lowland Forest (GipP)	Swamp Scrub (GipP)	Plains Grassy Woodland (GipP)	Floodplain Riparian Woodland (GipP)	Latrobe Valley Plains Grassland (GipP)	Plains Grassy Forest (GipP)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 53	EVC55	EVC56	EVC 132	EVC 151	W &/OR S	LB	PB	SB
Ground Layer Herbs (<1m)											
Acaena novea-zelandiae	Bidgee-widgee				■					■	■
Calocephalus citreus	Lemon Beauty-heads					■				■	■
Dichondra repens	Kidney Weed			■	■		■	■	■	■	■
Eryngium ovinum	Blue Devil					■				■	■
Gonocarpus tetragynus	Common Raspwort	■					■	■	■		
Hydrocotyle hirta	Hairy Pennywort				■		■	■	■		
Leptorhynchos squamatu	Scaly Buttons					■				■	■
Lobelia anceps	Angled Lobelia		■					■	■		
Lycopus australis	Australian Gypsywort		■					■	■		
Lythrum salicaria	Purple Loosestrife		■					■	■		
Persicaria praetermissa	Spotted Knotweed		■					■	■		
Persicaria subsessilis	Hairy Knotweed		■		■			■	■		
Tricoryne elatior	Yellow Rush-lily						■			■	■
Viola hederacea	Ivy-leaf Violet	■						■	■	■	■
Creepers/Climbers/Scramblers											
Billardiera scandens	Common Apple-berry	■								■	■
Ferns											
Blechnum cartilagineum	Gristle Fern		■					■	■		

Notes:

1. The EVCs listed in the table are most commonly found in main towns throughout the municipality. Other EVCs may apply to outlying areas/towns/specific areas. The applicable Bioregion and EVC for the site should be checked on NatureKit maps at www.environment.vic.gov.au/biodiversity/naturekit prior to finalisation of the planting list for a site.
2. In some locations the prevailing EVC will be listed as a 'complex' which may consist of a number of species from various EVCs.
3. Some species have been omitted from the list due to suitability, performance, small size, lack of commercial availability or tendency for weediness. For example, small, short-lived herbs or ground ferns that require a well-protected area under established vegetation, may be difficult to grow or will perform poorly when planted on cleared and exposed revegetation sites. *Phragmites australis* (Common Reed) is found in local EVCs, but is not recommended for new revegetation planting as it often requires regular control to stop it from taking over other plants in the same zone.
4. Pre-ordering of plants should take place as soon as the waterway management plan and detailed landscape plans have been approved. The lead time for sourcing and growing stock for larger projects may take up to six months.
5. Species selection for the 'conservation zone' are not identified in the table as the recommendations for this zone will depend on what is being conserved and recommendations for protection.
6. Species selection for the 'recreation zone' are not identified in the table as species may be selected that are not from the local EVC. For example, cultivars selected for their flowers/foliage may be chosen for this zone.
7. Within the 'service zone' trees and medium to large shrub species are generally not permitted. Check with relevant authority as to what species will be approved within this zone.
8. Plants identified for use in the 'wetland and sediment pond/WSUD Zone' will depend on the type of WSUD asset and the design. For example, wetlands are normally designed to include open water, submerged marsh, deep marsh, marsh, shallow marsh and littoral zones which all have different water depths. Plant species and their optimal growing conditions will need to be considered when selecting plants for each zone.
9. The species identified for each management zone provides a guide only. Species for each zone need to be selected based on the local Bioregion and EVC as well as the conditions of the site. For example, the primary buffer on one site may be subject to frequent inundation with wet/moist soils, yet on another site the primary buffer will have well-draining soils that are not subject to frequent inundation.

APPENDIX 3 – TABLE 4: SOUTH GIPPSLAND SHIRE PLANT SPECIES GUIDE FOR REVEGETATING WATERWAYS IN URBAN DEVELOPMENTS (AVAILABLE IN MS WORD)

BIOREGIONS PRESENT IN MAIN URBAN AREAS:
Gippsland Plains (GipP)
Strzelecki Ranges (Strz)

	ECOLOGICAL VEGETATION CLASSES (EVCs) COMMONLY LOCATED ALONG WATERWAYS						WATERWAY MANAGEMENT ZONE			
SOUTH GIPPSLAND PLANT SPECIES		Lowland Forest (GipP, Strz)	Riparian Forest (GipP, Strz)	Damp Forest (GipP, Strz)	Swamp Scrub (GipP, Strz)	Floodplain Riparian Woodland (GipP)	Swampy Riparian Woodland (GipP, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 18	EVC 29	EVC53	EVC56	EVC 83	W &/OR S	LB	PB	SB
Medium-Large Trees											
Acacia dealbata	Silver Wattle		■							■	■
Acacia implexa	Lightwood					■				■	■
Acacia melanoxylon	Blackwood	■	■			■	■			■	■
Eucalyptus camaldulensis	River Red-gum					■		■	■	■	■
Eucalyptus consideniana	Yertchuk	■								■	■
Eucalyptus croajingolensis	Gippsland Peppermint	■								■	■
Eucalyptus cypellocarpa	Mountain Grey Gum			■						■	■
Eucalyptus obliqua	Messmate Stringybark	■	■	■						■	■
Eucalyptus ovata	Swamp Gum		■			■	■	■	■	■	■
Eucalyptus radiata s.l.	Narrow-leaf Peppermint	■	■				■			■	■
Eucalyptus sieberi	Silvertop Ash	■								■	■
Eucalyptus strzeleckii	Strzelecki Gum		■							■	■
Eucalyptus tereticornis ssp. *mediana*	Gippsland Red Gum					■		■	■	■	■
Eucalyptus viminalis	Manna Gum		■							■	■
Small Trees/Large Shrubs											
Bedfordia arborescens	Blanket-leaf			■						■	
Leptospermum lanigerum	Woolly Tea-Tree				■		■	■	■	■	
Melaleuca ericifolia	Swamp Paperbark				■		■	■	■	■	
Pomaderris aspera	Hazel Pomaderris			■						■	
Medium Shrubs (2-5m)											
Acacia mucronata ssp. longifolia	Narrow-leaf Wattle	■								■	
Acacia verticillata	Prickly Moses		■							■	
Banksia marginata	Silver Banksia	■								■	
Bursaria spinosa	Sweet Bursaria					■	■			■	
Coprosma quadrifida	Prickly Currant-bush			■	■		■			■	
Epacris impressa	Common Heath	■						■	■	■	

SOUTH GIPPSLAND PLANT SPECIES		Lowland Forest (GipP, Strz)	Riparian Forest (GipP, Strz)	Damp Forest (GipP, Strz)	Swamp Scrub (GipP, Strz)	Floodplain Riparian Woodland (GipP)	Swampy Riparian Woodland (GipP, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 18	EVC 29	EVC53	EVC56	EVC 83	W &/OR S	LB	PB	SB
Medium Shrubs (2-5m) (continued)											
Hymenanthera dentata s.l.	Tree Violet										
Leptospermum continentale	Prickly Tea-tree										
Leptospermum myrsinoides	Heath Tea-tree										
Leucopogon lanceolatus var. *lanceolatus*	Lance Beard-heath										
Olearia lirata	Snowy Daisy-bush										
Ozothamnus ferrugineus	Tree Everlasting										
Polyscias sambucifolia	Elderberry Panax										
Small Shrubs/Prostrate Shrubs (<2m)											
Acrotriche serrulata	Honey-pots										
Amperea xiphoclada var. *xiphoclada*	Broom Spurge										
Goodenia ovata	Hop Goodenia										
Graminoids (tufted and non-tufted, various sizes)											
Baumea rubiginosa s.l.	Soft Twig-rush										
Carex appressa	Tall Sedge										
Cyperus lucidus	Leafy Flat-sedge										
Dianella caerulea var. *carulea*	Paroo Lily										
Dianella tasmanica	Tasman Flax-lily										
Eleocharis acuta	Common Spike-sedge										
Juncus amabilis	Hollow Rush										
Juncus gregiflorus	Green Rush										
Juncus procerus	Tall Rush										
Lomandra longifolia	Spiny-headed Mat Rush										
Microlaena stipoides var. *stipoides*	Weeping Grass										
Poa australis spp. agg	Tussock Grass										
Poa labillardierei	Common Tussock Grass										
Poa tenera	Slender Tussock Grass										
Microlaena stipoides	Weeping Grass										
Themeda triandra	Kangaroo Grass										
Triglochin procerum s.l.	Water Ribbons										
Xanthorrhoea minor ssp. *lutea*	Small Grass-tree										

SOUTH GIPPSLAND PLANT SPECIES		Lowland Forest (GipP, Strz)	Riparian Forest (GipP, Strz)	Damp Forest (GipP, Strz)	Swamp Scrub (GipP, Strz)	Floodplain Riparian Woodland (GipP)	Swampy Riparian Woodland (GipP, Strz)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 16	EVC 18	EVC 29	EVC53	EVC56	EVC 83	W &/OR S	LB	PB	SB
Ground Layer Herbs (<1m)											
Acaena novea-zelandiae	Bidgee-widgee		■			■	■			■	■
Dichondra repens	Kidney Weed		■			■	■	■	■	■	■
Gonocarpus tetragynus	Common Raspwort	■		■			■	■	■		
Hydrocotyle hirta	Hairy Pennywort					■	■	■	■		
Lobelia anceps	Angled Lobelia				■			■	■		
Lycopus australis	Australian Gypsywort			■				■	■		
Lythrum salicaria	Purple Loosestrife			■				■	■		
Persicaria praetermissa	Spotted Knotweed			■				■	■		
Persicaria subsessilis	Hairy Knotweed					■		■	■		
Viola hederacea	Ivy-leaf Violet	■	■	■				■	■	■	■
Creepers/Climbers/Scramblers											
Billardiera scandens	Common Apple-berry	■		■						■	■
Clematis aristata	Mountain Clematis	■		■						■	■
Smilax australis	Austral Sarsaparilla			■						■	■
Ferns											
Blechnum cartilagineum	Gristle Fern			■	■			■	■		
Blechnum minus	Soft Water-fern		■					■	■		
Blechnum nudum	Fishbone Water-fern		■					■	■		

Notes:

1. The EVCs listed in the table are most commonly found in main towns throughout the municipality. Other EVCs may apply to outlying areas/towns/specific areas. The applicable Bioregion and EVC for the site should be checked on NatureKit maps at www.environment.vic.gov.au/biodiversity/naturekit prior to finalisation of the planting list for a site.
2. In some locations the prevailing EVC will be listed as a 'complex' which may consist of a number of species from various EVCs.
3. Some species have been omitted from the list due to suitability, performance, small size, lack of commercial availability or tendency for weediness. For example, small, short-lived herbs or ground ferns that require a well-protected area under established vegetation, may be difficult to grow or will perform poorly when planted on cleared and exposed revegetation sites. *Phragmites australis* (Common Reed) is found in local EVCs, but is not recommended for new revegetation planting as it often requires regular control to stop it from taking over other plants in the same zone.
4. Pre-ordering of plants should take place as soon as the waterway management plan and detailed landscape plans have been approved. The lead time for sourcing and growing stock for larger projects may take up to six months.
5. Species selection for the 'conservation zone' are not identified in the table as the recommendations for this zone will depend on what is being conserved and recommendations for protection.
6. Species selection for the 'recreation zone' are not identified in the table as species may be selected that are not from the local EVC. For example, cultivars selected for their flowers/foliage may be chosen for this zone.
7. Within the 'service zone' trees and medium to large shrub species are generally not permitted. Check with relevant authority as to what species will be approved within this zone.
8. Plants identified for use in the 'wetland and sediment pond/WSUD Zone' will depend on the type of WSUD asset and the design. For example, wetlands are normally designed to include open water, submerged marsh, deep marsh, marsh, shallow marsh and littoral zones which all have different water depths. Plant species and their optimal growing conditions will need to be considered when selecting plants for each zone.
9. The species identified for each management zone provides a guide only. Species for each zone need to be selected based on the local Bioregion and EVC as well as the conditions of the site. For example, the primary buffer on one site may be subject to frequent inundation with wet/moist soils, yet on another site the primary buffer will have well-draining soils that are not subject to frequent inundation.

APPENDIX 3 – TABLE 5: BASS COAST SHIRE PLANT SPECIES GUIDE FOR REVEGETATING WATERWAYS IN URBAN DEVELOPMENTS (AVAILABLE IN MS WORD)

BIOREGIONS PRESENT IN MAIN URBAN AREAS:
Gippsland Plains (GipP)
Strzelecki Ranges (Strz)

	ECOLOGICAL VEGETATION CLASSES (EVCs) COMMONLY LOCATED ALONG WATERWAYS					WATERWAY MANAGEMENT ZONE			
BASS COAST PLANT SPECIES		Coast Banksia Woodland (GipP, Strz)	Damp Sands Herb-rich Woodland (GipP)	Swamp Scrub (GipP, Strz)	Plains Grassy Woodland (GipP, Strz)	Grassy Woodland (GipP)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 2	EVC 3	EVC53	EVC55	EVC 175	W &/OR S	LB	PB	SB
Medium-Large Trees										
Acacia mearnsii	Black Wattle		■		■	■			■	■
Acacia melanoxylon	Blackwood		■		■				■	■
Allocasuarina littoralis	Black Sheoak				■	■			■	■
Allocasuarina verticillata	Drooping Sheoak					■			■	■
Banksia integrifolia	Coast Banksia	■							■	■
Eucalyptus camaldulensis	River Red-gum				■		■	■	■	■
Eucalyptus radiata s.l.	Narrow-leaf Peppermint					■			■	■
Eucalyptus tereticornis ssp. *mediana*	Gippsland Red Gum				■		■	■	■	■
Eucalyptus viminalis ssp. *pryoriana*	Rough-barked Manna Gum	■	■						■	■
Small Trees/Large Shrubs										
Acacia longifolia ssp. *sophorae*	Coast Wattle	■							■	
Leptospermum laevigatum	Coast Tea-tree	■					■	■	■	
Leptospermum lanigerum	Woolly Tea-Tree			■			■	■	■	
Melaleuca ericifolia	Swamp Paperbark	■		■			■	■	■	
Myoporum insulare	Common Boobialla	■							■	
Medium Shrubs (2-5m)										
Acacia paradoxa	Hedge Wattle					■			■	
Banksia marginata	Silver Banksia		■						■	
Cassinia aculeata	Common Cassinia					■			■	
Coprosma quadrifida	Prickly Currant-bush			■					■	
Epacris impressa	Common Heath		■			■	■	■	■	
Leptospermum continentale	Prickly Tea-tree		■	■		■	■	■	■	
Leptospermum myrsinoides	Heath Tea-tree		■						■	

BASS COAST PLANT SPECIES		Coast Banksia Woodland (GipP, Strz)	Damp Sands Herb-rich Woodland (GipP)	Swamp Scrub (GipP, Strz)	Plains Grassy Woodland (GipP, Strz)	Grassy Woodland (GipP)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 2	EVC 3	EVC53	EVC55	EVC 175	W &/OR S	LB	PB	SB
Medium Shrubs (2-5m) (continued)										
Monotoca elliptica s.l.	Tree Broom-heath									
Leucopogon parviflorus	Coast Beard-heath									
Small Shrubs/Prostrate Shrubs (<2m)										
Acrotriche serrulata	Honey-pots									
Amperea xiphoclada var. *xiphoclada*	Broom Spurge									
Astroloma humifusum	Cranberry Heath									
Bossiaea prostrata	Creeping Bossiaea									
Dillwynia glaberrima	Smooth Parrot-pea									
Hibbertia riparia	Erect Guinea-flower									
Leucopogon virgatus	Common Beard-heath									
Sambucus gaudichaudiana	White Elderberry									
Graminoids (tufted and non-tufted, various sizes)										
Baumea rubiginosa s.l.	Soft Twig-rush									
Carex appressa	Tall Sedge									
Carex breviculmis	Common Grass-sedge									
Dianella revoluta s.l.	Black-anther Flax-lily									
Eleocharis acuta	Common Spike-sedge									
Isolepis inundata	Swamp Club-sedge									
Juncus gregiflorus	Green Rush									
Juncus procerus	Tall Rush									
Lomandra longifolia	Spiny-headed Mat Rush									
Microlaena stipoides var. *stipoides*	Weeping Grass									
Poa labillardierei	Common Tussock Grass									
Poa sieberiana	Grey Tussock Grass									
Microlaena stipoides var. *stipoides*	Weeping Grass									
Schoenus apogon	Common Bog-sedge									
Themeda triandra	Kangaroo Grass									
Xanthorrhoea minor ssp. *lutea*	Small Grass-tree									
Ground Layer Herbs (<1m)										
Dichondra repens	Kidney Weed									
Geranium solanderi s.l.	Austral Cranesbill									
Gonocarpus tetragynus	Common Raspwort									
Lobelia anceps	Angled Lobelia									

BASS COAST PLANT SPECIES		Coast Banksia Woodland (GipP, Strz)	Damp Sands Herb-rich Woodland (GipP)	Swamp Scrub (GipP, Strz)	Plains Grassy Woodland (GipP, Strz)	Grassy Woodland (GipP)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 2	EVC 3	EVC53	EVC55	EVC 175	W &/OR S	LB	PB	SB
Ground Layer Herbs (<1m) (continued)										
Lycopus australis	Australian Gypsywort									
Lythrum salicaria	Purple Loosestrife									
Persicaria praetermissa	Spotted Knotweed									
Ground Layer Herbs (<1m) (continued)										
Viola hederacea	Ivy-leaf Violet									
Creepers/Climbers/Scramblers										
Billardiera scandens	Common Apple-berry									
Clematis mycrophylla	Small-leaved Clematis									
Tetragonia implexicoma	Bower Spinach									
Ferns										
Blechnum cartilagineum	Gristle Fern									

Notes:

1 The EVCs listed in the table are most commonly found in main towns throughout the municipality. Other EVCs may apply to outlying areas/towns/specific areas. The applicable Bioregion and EVC for the site should be checked on NatureKit maps at www.environment.vic.gov.au/biodiversity/naturekit prior to finalisation of the planting list for a site.

2 In some locations the prevailing EVC will be listed as a 'complex' which may consist of a number of species from various EVCs.

3 Some species have been omitted from the list due to suitability, performance, small size, lack of commercial availability or tendency for weediness. For example, small, short-lived herbs or ground ferns that require a well-protected area under established vegetation, may be difficult to grow or will perform poorly when planted on cleared and exposed revegetation sites. *Phragmites australis* (Common Reed) is found in local EVCs, but is not recommended for new revegetation planting as it often requires regular control to stop it from taking over other plants in the same zone.

4 Pre-ordering of plants should take place as soon as the waterway management plan and detailed landscape plans have been approved. The lead time for sourcing and growing stock for larger projects may take up to six months.

5 Species selection for the 'conservation zone' are not identified in the table as the recommendations for this zone will depend on what is being conserved and recommendations for protection.

6 Species selection for the 'recreation zone' are not identified in the table as species may be selected that are not from the local EVC. For example, cultivars selected for their flowers/foliage may be chosen for this zone.

7 Within the 'service zone' trees and medium to large shrub species are generally not permitted. Check with relevant authority as to what species will be approved within this zone.

8 Plants identified for use in the 'wetland and sediment pond/WSUD Zone' will depend on the type of WSUD asset and the design. For example, wetlands are normally designed to include open water, submerged marsh, deep marsh, marsh, shallow marsh and littoral zones which all have different water depths. Plant species and their optimal growing conditions will need to be considered when selecting plants for each zone.

9 The species identified for each management zone provides a guide only. Species for each zone need to be selected based on the local Bioregion and EVC as well as the conditions of the site. For example, the primary buffer on one site may be subject to frequent inundation with wet/moist soils, yet on another site the primary buffer will have well-draining soils that are not subject to frequent inundation.

APPENDIX 3 – TABLE 6: EAST GIPPSLAND SHIRE PLANT SPECIES GUIDE FOR REVEGETATING WATERWAYS IN URBAN DEVELOPMENTS (AVAILABLE IN MS WORD)

BIOREGIONS PRESENT IN MAIN URBAN AREAS:
Gippsland Plains (GipP)
East Gippsland Lowlands (EGL)
East Gippsland Uplands (EGU)
Highlands Southern Fall (HSF)
Highlands Northern Fall (HNF)
Victorian Alps (VAlp)

	ECOLOGICAL VEGETATION CLASSES (EVCs) COMMONLY LOCATED ALONG WATERWAYS	WATERWAY MANAGEMENT ZONE

EAST GIPPSLAND PLANT SPECIES		Damp Sands Herb-rich Woodland (GipP, HSF, HNF, EGU, EGL)	Lowland Forest (GipP, HSF, HNF, EGU, EGL)	Riparian Forest (GipP, HSF, HNF, EGU, EGL, VAlp)	Plains Grassy Woodland (GipP, HSF, HNF, EGL)	Plains Grassy Forest (GipP, HSF, EGL)	Grassy Woodland (GipP, HSF, HNF, VAlp) and Rainshadow Grassy Woodland (EGL, EGU) and Limestone Grassy Woodland (EGL, EGU)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	Common Name	EVC 3	EVC16	EVC18	EVC55	EVC151	EVC 175	W &/OR S	LB	PB	SB
Medium-Large Trees											
Acacia dealbata	Silver Wattle		■	■			■			■	■
Acacia implexa	Lightwood					■	■			■	■
Acacia mearnsii	Black Wattle	■			■	■	■			■	■
Acacia melanoxylon	Blackwood	■	■	■	■		■			■	■
Allocasuarina littoralis	Black Sheoak				■	■	■			■	■
Allocasuarina verticillata	Drroping Sheoak						■			■	■
Banksia integrifolia	Coast Banksia	■								■	■
Banksia serrata	Saw Banksia	■								■	■
Brachychiton populneus ssp. *populneus*	Kurrajong						■			■	■
Eucalyptus albens	White Box						■			■	■
Eucalyptus botryoides	Southern Mahogany					■				■	■
Eucalyptus bridgesiana s.l.	But But					■	■			■	■
Eucalyptus camaldulensis	River Red-gum				■			■	■	■	■
Eucalyptus chapmaniana	Bogong Gum			■						■	■
Eucalyptus consideniana	Yertchuk		■							■	■
Eucalyptus croajingolensis	Gippsland Peppermint			■						■	■
Eucalyptus cypellocarpa	Mountain Grey Gum		■	■						■	■
Eucalyptus dives	Broad-leaved Peppermint			■			■			■	■

EAST GIPPSLAND PLANT SPECIES		Damp Sands Herb-rich Woodland (GipP, HSF, HNF, EGU, EGL)	Lowland Forest (GipP, HSF, HNF, EGU, EGL)	Riparian Forest (GipP, HSF, HNF, EGU, EGL, VAlp)	Plains Grassy Woodland (GipP, HSF, HNF, EGL)	Plains Grassy Forest (GipP, HSF, EGL)	Grassy Woodland (GipP, HSF, HNF, VAlp) and Rainshadow Grassy Woodland (EGL, EGU) and Limestone Grassy Woodland (EGL, EGU)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 3	EVC16	EVC18	EVC55	EVC151	EVC 175	W &/OR S	LB	PB	SB
Medium-Large Trees (continued)											
Eucalyptus elata	River Peppermint			■						■	■
Eucalyptus globoidea	White Stringybark		■			■				■	■
Eucalyptus goniocalyx s.l.	Bundy	■								■	■
Eucalyptus macrorhyncha	Red Stringybark					■				■	■
Eucalyptus mannifera ssp. *mannifera*	Brittle Gum						■			■	■
Eucalyptus melliodora	Yellow Box	■			■		■			■	■
Eucalyptus muelleriana	Yellow Stringybark					■				■	■
Eucalyptus obliqua	Messmate Stringybark		■	■						■	■
Eucalyptus ovata	Swamp Gum	■		■				■	■	■	■
Eucalyptus pauciflora	Snow Gum					■	■			■	■
Eucalyptus polyanthemos	Red Box					■				■	■
Eucalyptus radiata s.l.	Narrow-leaf Peppermint		■	■						■	■
Eucalyptus rubida	Candlebark			■			■			■	■
Eucalyptus sieberi	Silvertop Ash		■							■	■
Eucalyptus tereticornis ssp. *mediana*	Gippsland Red Gum				■			■	■	■	■
Eucalyptus viminalis	Manna Gum	■		■			■			■	■
Eucalyptus viminalis subsp. *pryoriana*	Rough-barked Manna Gum	■								■	■
Tristaniopsis laurina	Kanooka or Water Gum	■								■	■
Small Trees/Large Shrubs											
Elaeocarpus reticulatus	Blueberry Ash			■						■	
Melaleuca parvistaminea	Rough-barked Honey-myrtle					■				■	
Pomaderris aspera	Hazel Pomaderris		■	■						■	
Medium Shrubs (2-5m)											
Acacia acinacea s.l.	Gold-dust Wattle		■		■					■	
Acacia mucronata ssp. longifolia	Narrow-leaf Wattle		■							■	
Acacia myrtifolia	Myrtle Wattle		■							■	
Acacia paradoxa	Hedge Wattle	■			■		■			■	

EAST GIPPSLAND PLANT SPECIES		Damp Sands Herb-rich Woodland (GipP, HSF, HNF, EGU, EGL)	Lowland Forest (GipP, HSF, HNF, EGU, EGL)	Riparian Forest (GipP, HSF, HNF, EGU, EGL, VAlp)	Plains Grassy Woodland (GipP, HSF, HNF, EGL)	Plains Grassy Forest (GipP, HSF, EGL)	Grassy Woodland (GipP, HSF, HNF, VAlp) and Rainshadow Grassy Woodland (EGL, EGU) and Limestone Grassy Woodland (EGL, EGU)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 3	EVC16	EVC18	EVC55	EVC151	EVC 175	W &/OR S	LB	PB	SB
Medium Shrubs (2-5m) (cont'd)											
Acacia pycnantha	Golden Wattle				■					■	
Acacia terminalis	Sunshine Wattle		■							■	
Acacia verticillata	Prickly Moses	■	■	■						■	
Banksia marginata	Silver Banksia	■	■			■				■	
Brachyloma daphnoides	Daphne Heath						■			■	
Bursaria spinosa	Sweet Bursaria	■			■		■			■	
Cassinia aculeata	Common Cassinia			■			■			■	
Cassinia longifolia	Shiny Cassinia			■			■			■	
Coprosma quadrifida	Prickly Currant-bush			■						■	
Daviesia ulicifolia	Gorse Bitter-pea			■			■			■	
Epacris impressa	Common Heath	■	■				■	■	■	■	
Exocarpus strictus	Pale-fruit Ballart						■			■	
Hymenanthera dentata s.l.	Tree Violet						■			■	
Indigofera australis	Austral Indigo			■			■			■	
Leptospermum continentale	Prickly Tea-tree	■	■	■		■	■	■	■	■	
Leptospermum myrsinoides	Heath Tea-tree	■	■							■	
Leucopogon lanceolatus var. *lanceolatus*	Lance Beard-heath		■	■						■	
Notelaea venosa	Large Mock-olive			■						■	
Olearia lirata	Snowy Daisy-bush			■						■	
Ozothamnus conditus	Pepper Everlasting						■			■	
Ozothamnus ferrugineus	Tree Everlasting	■		■						■	
Pomaderris velutina	Velvet Pomaderris						■			■	
Prostanthera lasianthos	Victorian Christmas-bush			■						■	
Pultenaea juniperina s.l.	Prickly Bush-pea						■			■	
Small Shrubs/Prostrate Shrubs (<2m)											
Acrotriche prostrata	Trailing Ground-berry			■						■	
Acrotriche serrulata	Honey-pots		■	■		■	■			■	

EAST GIPPSLAND PLANT SPECIES		Damp Sands Herb-rich Woodland (GipP, HSF, HNF, EGU, EGL)	Lowland Forest (GipP, HSF, HNF, EGU, EGL)	Riparian Forest (GipP, HSF, HNF, EGU, EGL, VAlp)	Plains Grassy Woodland (GipP, HSF, HNF, EGL)	Plains Grassy Forest (GipP, HSF, EGL)	Grassy Woodland (GipP, HSF, HNF, VAlp) and Rainshadow Grassy Woodland (EGL, EGU) and Limestone Grassy Woodland (EGL, EGU)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 3	EVC16	EVC18	EVC55	EVC151	EVC 175	W &/OR S	LB	PB	SB
Small Shrubs/Prostrate Shrubs (<2m) (continued)											
Amperea xiphoclada var. *xiphoclada*	Broom Spurge	■	■							■	
Astroloma humifusum	Cranberry Heath	■			■	■	■			■	
Bossiaea prostrata	Creeping Bossiaea				■	■	■			■	
Dampiera stricta	Blue Dampiera		■							■	
Dillwynia glaberrima	Smooth Parrot-pea	■								■	
Goodenia ovata	Hop Goodenia		■	■				■	■	■	
Hibbertia riparia	Erect Guinea-flower	■				■	■			■	
Leucopogon virgatus	Common Beard-heath	■								■	
Lissanthe strigosa ssp. *subulata*	Peach Heath	■					■			■	
Lomatia ilicifolia	Holly Lomatia		■							■	
Olearia myrsinoides	Silky Daisy-bush			■						■	
Phyllanthus hirtellus	Thyme Spurge					■				■	
Pimelea glauca	Smooth Rice-flower						■			■	
Platylobium formosum	Handsome Flat-pea						■			■	
Platylobium obtusangulum	Common Flat-pea					■				■	
Tetratheca ciliata	Pink-bells		■	■						■	
Tetratheca pilosa	Hairy Pink-bells		■							■	
Graminoids (tufted and non-tufted, various sizes)											
Carex appressa	Tall Sedge			■				■	■	■	■
Carex breviculmis	Common Grass-sedge			■	■		■	■	■	■	■
Dianella caerulea var. *carulea*	Paroo Lily		■					■	■	■	■
Dianella revoluta s.l.	Black-anther Flax-lily	■	■				■	■	■	■	■
Dianella tasmanica	Tasman Flax-lily			■				■	■	■	■
Echinopogon ovatus	Common Hedgehog-Grass			■			■	■	■		
Gahnia sieberiana	Red-fruit Saw-sedge			■				■	■		
Isolepis inundata	Swamp Club-sedge			■				■	■		
Juncus pallidus	Pale Rush	■						■	■		

EAST GIPPSLAND PLANT SPECIES		Damp Sands Herb-rich Woodland (GipP, HSF, HNF, EGU, EGL)	Lowland Forest (GipP, HSF, HNF, EGU, EGL)	Riparian Forest (GipP, HSF, HNF, EGU, EGL, VAlp)	Plains Grassy Woodland (GipP, HSF, HNF, EGL)	Plains Grassy Forest (GipP, HSF, EGL)	Grassy Woodland (GipP, HSF, HNF, VAlp) and Rainshadow Grassy Woodland (EGL, EGU) and Limestone Grassy Woodland (EGL, EGU)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 3	EVC16	EVC18	EVC55	EVC151	EVC 175	W &/OR S	LB	PB	SB
Graminoids (tufted and non-tufted, various sizes) (continued)											
Joycea pallida	Silvertop Wallaby-grass										
Lomandra longifolia	Spiny-headed Mat Rush										
Microlaena stipoides var. *stipoides*	Weeping Grass										
Patersonia glabrata	Leafy Purple-flag										
Poa australis spp. agg	Tussock Grass										
Poa ensiformis	Sword Tussock-grass										
Poa labillardierei	Common Tussock Grass										
Poa sieberiana	Grey Tussock Grass										
Poa tenera	Slender Tussock Grass										
Microlaena stipoides var. *stipoides*	Weeping Grass										
Rytidosperma penicillatum Syn. *Austrodanthonia penicillata*	Slender Wallaby-grass										
Rytidosperma racemosum var. *racemosum* Syn. *Austrodanthonia racemosa* var. *racemosa*	Stiped Wallaby-grass										
Rytidosperma setaceum Syn. *Austrodanthonia setacea*	Bristly Wallaby-grass										
Schoenus apogon	Common Bog-sedge										
Stylidium graminifolium s.l.	Grass Trigger-plant										
Themeda triandra	Kangaroo Grass										
Xanthorrhoea minor ssp. *lutea*	Small Grass-tree										
Ground Layer Herbs (<1m)											
Acaena novea-zelandiae	Bidgee-widgee										
Dichondra repens	Kidney Weed										
Eryngium ovinum	Blue Devil										
Geranium solanderi s.l.	Austral Cranesbill										
Gonocarpus tetragynus	Common Raspwort										
Hydrocotyle hirta	Hairy Pennywort										

EAST GIPPSLAND PLANT SPECIES		Damp Sands Herb-rich Woodland (GipP, HSF, HNF, EGU, EGL)	Lowland Forest (GipP, HSF, HNF, EGU, EGL)	Riparian Forest (GipP, HSF, HNF, EGU, EGL, VAlp)	Plains Grassy Woodland (GipP, HSF, HNF, EGL)	Plains Grassy Forest (GipP, HSF, EGL)	Grassy Woodland (GipP, HSF, HNF, VAlp) and Rainshadow Grassy Woodland (EGL, EGU) and Limestone Grassy Woodland (EGL, EGU)	Wetland and Sediment Pont/WSUD Zone	Low Bank - Channel Zone	Primary Buffer Zone	Secondary Buffer Zone
Botanical Name	**Common Name**	EVC 3	EVC16	EVC18	EVC55	EVC151	EVC 175	W &/OR S	LB	PB	SB
Ground Layer Herbs (<1m) (continued)											
Kennedia prostrata	Running Postman										
Leptorhynchos squamatu	Scaly Buttons										
Tricoryne elatior	Yellow Rush-lily										
Scaevola ramosissima	Hairy Fan-flower										
Stackhousia monogyna	Creamy Stackhousia										
Veronica perfoliata Syn. *Derwentia perfoliata*	Digger's Speedwell										
Viola hederacea	Ivy-leaf Violet										
Creepers/Climbers/Scramblers											
Billardiera scandens	Common Apple-berry										
Clematis aristata	Mountain Clematis										
Clematis microphylla	Small-leaved Clematis										
Comesperma volubile	Love Creeper										
Hardenbergia violacea	Purple Coral-pea										
Smilax australis	Austral Sarsaparilla										
Thysanotus patersonii	Climbing Fringe-lily										
Ferns											
Blechnum cartilagineum	Gristle Fern										
Blechnum nudum	Fishbone Water-fern										
Blechnum minus	Soft Water-fern										

Notes:

1. The EVCs listed in the table are most commonly found in main towns throughout the municipality. Other EVCs may apply to outlying areas/towns/specific areas. The applicable Bioregion and EVC for the site should be checked on NatureKit maps at www.environment.vic.gov.au/biodiversity/naturekit prior to finalisation of the planting list for a site.
2. In some locations the prevailing EVC will be listed as a 'complex' which may consist of a number of species from various EVCs.
3. Some species have been omitted from the list due to suitability, performance, small size, lack of commercial availability or tendency for weediness. For example, small, short-lived herbs or ground ferns that require a well-protected area under established vegetation, may be difficult to grow or will perform poorly when planted on cleared and exposed revegetation sites. *Phragmites australis* (Common Reed) is found in local EVCs, but is not recommended for new revegetation planting as it often requires regular control to stop it from taking over other plants in the same zone.
4. Pre-ordering of plants should take place as soon as the waterway management plan and detailed landscape plans have been approved. The lead time for sourcing and growing stock for larger projects may take up to six months.
5. Species selection for the 'conservation zone' are not identified in the table as the recommendations for this zone will depend on what is being conserved and recommendations for protection.
6. Species selection for the 'recreation zone' are not identified in the table as species may be selected that are not from the local EVC. For example, cultivars selected for their flowers/foliage may be chosen for this zone.
7. Within the 'service zone' trees and medium to large shrub species are generally not permitted. Check with relevant authority as to what species will be approved within this zone.
8. Plants identified for use in the 'wetland and sediment pond/WSUD Zone' will depend on the type of WSUD asset and the design. For example, wetlands are normally designed to include open water, submerged marsh, deep marsh, marsh, shallow marsh and littoral zones which all have different water depths. Plant species and their optimal growing conditions will need to be considered when selecting plants for each zone.
9. The species identified for each management zone provides a guide only. Species for each zone need to be selected based on the local Bioregion and EVC as well as the conditions of the site. For example, the primary buffer on one site may be subject to frequent inundation with wet/moist soils, yet on another site the primary buffer will have well-draining soils that are not subject to frequent inundation.