Wetland Design Manual Supporting Document: Planning, Funding & Management

Manual

December 2020

Melbourne Water makes a vital contribution to the famous Melbourne lifestyle through the supply of high-quality water, reliable sewerage services, integrated drainage and flood management services and by enhancing our waterways and land for greater community use.

VICTORIA State Government

Melbourne Water

Enhancing Life and Liveability

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1. Purpose

Melbourne Water is the waterway, floodplain and drainage management authority across the entire Port Phillip and Westernport region.

Melbourne Water performs waterway, floodplain and drainage management functions under the *Water Act* (1989) and *Water Industry Act* (1994). Melbourne Water is also a Referral Authority for Town Planning applications from Councils under the *Subdivision Act* (1988) and *Planning and Environment Act* (1987).

Melbourne Water plays an important role in coordinating the planning, design and delivery of a variety of stormwater management infrastructure types. This infrastructure services new urban development, including the many proposed future constructed wetlands that have been planned in our Development Services Schemes across the region's growth areas.

There are also a number of regulatory considerations for stormwater management. They include water policy, such as the State Environment Protection Policy – Waters of Victoria, as well as key government strategies and the Victoria Planning Provisions.

2. Scope

This document outlines in further detail some of the regulatory considerations for stormwater management.

2.1 Water Industry Act (1994)

Under Section 42(1) of the *Water Industry Act (1994)*, the Minister for Water is responsible for issuing Melbourne Water with a 'Statement of Obligations'. Section 6-3 of the Statement of Obligations sets out Melbourne Water's responsibilities with respect to 'Waterways and Drainage' and requires that Melbourne Water prepare, implement and report on a Waterways and Drainage Strategy. Melbourne Water has addressed this obligation by producing the following strategic documents:

- Waterways Operating Charter
- Healthy Waterways Strategy
- Stormwater Strategy
- Floodplain and Drainage Strategy

The Charter and accompanying Strategies provide important context for a series of other related plans and guidelines, including our Development Services Schemes. This information assists Melbourne Water and our customers to deliver the waterway, floodplain and drainage management services we are obligated to provide the community.

2.2 Water Act (1989)

Melbourne Water has a range of powers under the *Water Act (1989)* that enable us to carry out a broad range of functions. Part 10 of the *Water Act (1989)* relates specifically to Melbourne Water's waterway, floodplain and drainage management functions.

Provisions exist under Section 199 of the *Water Act (1989)* to establish Development Services Schemes, which are the principal planning tool Melbourne Water uses to assist in implementing our waterway, floodplain and drainage management functions within the growth areas across the Port Phillip and Westernport region.

This legislation is currently being reviewed. The new Water Act will commence on 1 January 2016.

2.3 Planning and Environment Act (1987)

Under Section 55 of the *Planning and Environment Act (1987),* the Responsible Authority must refer all Planning Permit applications to Melbourne Water for proposed buildings and works on:

- Properties covered by Land Subject to Inundation Overlays (LSIO), Special
- Building Overlays (SBO), Floodway Overlays (FO);
- Land designated as an Urban Floodway Zone (UFZ);
- Land within 30 metres of a designated waterway;
- Floodplains within Melbourne Water's waterway management district.

Under Section 56 of the *Planning and Environment Act (1987)*, Melbourne Water may place conditions on Planning Permits that require the applicant to meet certain obligations with respect to drainage, floodplain and waterway management.

Melbourne Water may request functional designs be prepared to our satisfaction, prior to being able to respond to a Planning Permit application. An example of a situation where this might occur is where development layouts are required to incorporate stormwater management assets such as retarding basins, wetlands and waterways, which all require the appropriate land area to ensure proper functioning of these assets.

2.4 Subdivisions Act (1988)

Under Section 8 of the *Subdivision Act (1988)* the Responsible Authority must refer Plans of Subdivision to Melbourne Water for consent prior to Certification. As part of the referral process, Melbourne Water may request more information or require a stormwater management strategy and/or engineering functional design plans to be prepared prior to being able to provide a Letter of Consent for the Certification of a Plan of Subdivision.

Melbourne Water always requires Reserves to be created over existing and constructed wetlands on Plans of Subdivision. Typically, the Reserve is vested to the local Council, with Melbourne Water requiring a Memorandum of Common Provisions (MCP) Easement (AA1107) to be created over the Reserve in our favour.

3. Legislation and Constructed Wetlands

3.1 State Environment Protection Policy (Waters of Victoria)

The State Environment Protection Policy (SEPP) (Waters of Victoria) is a state wide policy that requires runoff from urban and rural areas not to compromise the beneficial uses of receiving waterways. This policy specifically refers to stormwater pollution and requires

the implementation of measures to control its environmental impact. Water Sensitive Urban Design and constructed wetlands are two tools used to comply with this Policy.

The SEPP sets a statutory framework for the protection of the uses and values of Victoria's fresh and marine water environments. As required by the *Environment Protection Act (1970)*, the SEPP includes:

- Uses and values of the water environment that the community and government want to protect-these are known as beneficial uses,
- Objectives and indicators that describe the environmental quality required to protect beneficial uses,
- Guidance to catchment management authorities, coastal boards, water authorities, communities, businesses and local government and state government agencies to protect and rehabilitate water environments to a level where environmental objectives are met and beneficial uses are protected-this is known as The Attainment Program.

The SEPP is based on the principles of the *Environment Protection Act (1970)* and reflects the community's expectations of how we should continue to provide for Victoria's economic and social development while sustaining our environment. The principles are listed in Part II (Clause 5) of the SEPP and should be considered when making decisions on implementing the SEPP. Essentially, the principles promote the adoption of sound environmental practices and procedures as a basis for ecologically sustainable development. They promote a 'triple bottom line' approach by integrating the consideration of environmental, social and economic values in planning and decision-making processes.

To protect its beneficial uses, water needs a certain level of health. Water must not carry pollutants (e.g. nutrients, sediment, salt and toxicants):

- At levels that are harmful to humans, plants and animals
- That result in an objectionable colour or odour,
- That renders the water unsuitable for the many uses that depend on healthy water.

In addition, water needs to be free of human impacts detrimental to beneficial uses.

The SEPP provides a measure of the health of water environments by nominating core objectives and indicators that can be used to assess the key risks to beneficial uses. These objectives and indicators describe the level of health required to ensure beneficial uses. Indicators relevant to stormwater, including water within constructed waterways and wetlands, are: nutrients (phosphorus and nitrogen), turbidity, salinity, pH, dissolved oxygen, toxicants (in water and sediments) and biological indicators. The biological indicators and objectives are especially important, as they provide a direct means of assessing the health of an ecosystem as affected by water quality, flow and habitat.

The SEPP also contains a series of actions encapsulated as clauses. Those relevant to constructed wetlands are outlined here:

Clause 10: Beneficial uses

Artificial stormwater drains and artificial wetlands are exempt from having to meet beneficial uses as per natural surface water systems. These artificial environments need to be managed for the purpose for which they were constructed. They must be designed

and managed so as not to be harmful to humans or have unacceptable impacts on animals, and they must minimise impact on surface waters.

Clause 43: Surface water management and works

Works on or adjacent to surface waters must be managed to minimise environmental risks to the aquatic ecosystem and to protect other beneficial uses. To enable this, surface water managers need to:

1. Ensure works within or adjacent to surface waters are managed so that unnatural erosion, sediment re-suspension and other environmental risks to aquatic habitats are minimised; and
2. Ensure existing and new in-situ structures do not pose a barrier to native fish movement.

Clause 46: Urban stormwater

Although the beneficial use of the aquatic ecology is not protected in artificial stormwater drains, stormwater run-off from urban areas can have a significant impact on rivers, streams, lakes, estuaries, wetlands, bays and coastal waters. These environments must be protected for the purpose for which they have been constructed (i.e. the transport of stormwater) and must not have unacceptable impacts on animals.

The SEPP supports the development and implementation of municipal stormwater management plans and the implementation of effective management practices, particularly for new residential developments and drainage systems.

The SEPP makes reference to the Urban Stormwater Best Practice Management Guidelines (1999), which includes actions to minimise the pollution of stormwater as well as guidance on the content of stormwater management plans. In addition, the SEPP identifies the need for EPA to work with municipal councils and DSE to ensure new developments include practices to minimise stormwater runoff volumes and the impacts of urban stormwater.

Improved stormwater management will contribute to the protection of the ecological, economic, recreational and aesthetic values of Victoria's waters.

Clause 56: Construction activities

Construction practices that fail to control pollution can cause damage to waterways and wetlands and disturb aquatic ecosystems by smothering habitats and contributing nutrients that may have significant impacts on fish, plants and other aquatic life.

To protect beneficial uses, all construction activities must be managed to minimise impacts on aquatic environments, particularly if works cross or adjoin surface waters.

By enabling the reduction of sediment, nutrient, litter and contaminated water runoff from construction sites, the Clause contributes to the protection of the ecological, economic, recreational and aesthetic values of Victoria's water environments. Consideration of these issues at the planning phase of a project will help ensure that measures to prevent pollution are built into the project's design, work schedule and budget.

3.1.1 Living Victoria Policy

Living Victoria is the Government's 2010 election commitment to urban water reform. It is an effective new way of planning and servicing our urban water cycle – drinking water, stormwater, wastewater, the environment and urban amenity. The *Living Victoria policy* involves using more of the water available within our urban areas and less use of water from outside the urban catchment. Research shows that urban areas have significant alternative water sources, such as rainwater, stormwater and wastewater, which can meet our non-potable water needs.

3.1.2 Melbourne's Water Future

Melbourne's Water Future is the beginning of a new era in water cycle planning and management. This new approach looks at how the different parts of the whole water cycle work together. All parts of the water cycle-drinking water, rainwater, stormwater (which runs off our hard surfaces), wastewater, groundwater, natural waterways and green open spaces-are connected in ways that best deliver liveable, sustainable, resilient and productive communities. Some of the key vision statements guiding the document include:

- Lower costs for water and infrastructure (large water augmentation projects),
- Secure drinking water supplies,
- Improved environment, and waterway health,
- Green neighbourhood parks and gardens.

3.1.3 Plan Melbourne

Plan Melbourne is the Victorian Government's metropolitan planning strategy to guide the city's growth to 2050. It is a strategy to house, employ and move more people around the metropolitan area and beyond.

The strategy explains that Melbourne's sustainability is defined by the strength, health and beauty of our natural environment, and the resilience of our built environment. Key to sustainability is the way in which we manage our water, energy and waste resources. As the city grows, it will become increasingly important to maintain the health of urban waterways, enhance our biodiversity values and ensure a balanced approach to coastal protection. We need to change the way we plan and manage both urban development and water services to enable a more comprehensive and innovative approach to using stormwater and recycled water.

3.1.4 Victorian Planning Provisions

The Victoria Planning Provisions (VPP) contains a number of clauses that support the sustainable management of stormwater runoff from development, including the use of constructed wetlands. Clauses include the State Planning Policy Framework Clauses

10, 11, 12, 14, 15 and 19, which pertain to all types of development within Victoria. Councils are responsible for administering planning policies, and these clauses provide a solid basis in the planning scheme for Councils and Melbourne Water to appropriately apply water quality requirements to all developments, including residential, industrial and commercial uses.

Clauses 56.07 and 56.08 of the VPP were introduced on 9 October 2006 and provide greater standards and requirements around the sustainable management of stormwater runoff from developments. Clause 56.07 relates to integrated water management in residential subdivisions, and Clause 56.07-4 and Standard 25 mandate best practice targets for pollutant load reductions and flow discharges to be met in such developments.

In most cases, these guidelines require the incorporation of water quality treatment systems and constructed wetlands into subdivision design. Clause 56.08 establishes requirements for site management during residential subdivision works and includes many issues relevant to the protection of water quality treatment systems, such as site sediment control.

All of the abovementioned planning policies relating to stormwater management apply state wide. Further information on these policies is provided below.

Clause 10 – Operation of the State Planning Policy Framework

This Clause, and the following Clauses, establishes the link between the planning system and the state requirements for environmental protection, and provides guidance for developers from a planning perspective.

Clause 11 – Settlement

Clause 11 aims to ensure a sufficient amount of land is available for residential, commercial, industrial, recreational, institutional and other public uses within urban areas. Clause 11 aims to contribute towards:

- *"A high standard of urban design and amenity;*
- *Prevention of pollution to land, water and air; and*
- *Protection of environmentally sensitive areas and natural resources."*

Clause 12 – Environmental and Landscape Values

Clause 12 aims to "protect the health of ecological systems and the biodiversity they support" and to "conserve areas with identified environmental and landscape values". It states that "Planning must implement environmental principles for ecologically sustainable development that have been established by international and national agreements".

Clause 14 – Natural Resource Management

Clause 14 aims to "assist in the conservation and wise use of natural resources including energy, water, land, stone and minerals to support both environmental quality and sustainable development".

Clause 14.02, Water, outlines objectives, strategies and policy guidelines for catchment planning and management, water quality and water conservation. This clause includes protecting and restoring waterways, catchments and other water bodies, protecting water quality, and encouraging the use of alternative water sources.

Clause 15 – Built Environment and Heritage

Clause 15 aims to protect "sites with significant heritage, architectural, aesthetic, scientific and cultural value". It sets out to achieve high quality urban design to contribute positively to communities, enhance liveability, reflect cultural identity, and promote attractive and high amenity communities.

Clause 19 – Infrastructure

Clause 19 aims to ensure social and physical infrastructure is provided in an "efficient, equitable, accessible and timely" way.

Clause 19.03-2, Water supply, sewerage and drainage, requires that planning and responsible authorities ensure:

1. "Water quality in water supply catchments is protected from possible contamination by urban, industrial and agricultural land uses."

2. Urban stormwater drainage systems take into account the catchment context, and "include measures to reduce peak flows and assist screening, filtering and treatment of stormwater, to enhance flood protection and minimise impacts on water quality in receiving waters" and prevent intrusion of litter.

Clause 19.03-3, Stormwater, has a key objective to "reduce the impact of stormwater on bays and catchments" with strategies to:

3. "Support integrated planning of stormwater quality through a mix of on-site measures and developer contributions.
4. Mitigate stormwater pollution from construction sites.
5. Ensure stormwater and groundwater entering wetlands do not have a detrimental effect on wetlands and estuaries.
6. Incorporate water-sensitive urban design techniques into developments to:
   - Protect and enhance natural water systems.
   - Integrate stormwater treatment into the landscape.
   - Protect quality of water.
   - Reduce run-off and peak flows.
   - Minimise drainage and infrastructure costs."

Clause 56.07-4 and Standard C25

Under Clause 56.07-4, local councils are responsible for ensuring urban runoff from new residential subdivisions of 2 lots or more meets best practice water quality and flow requirements. The objectives of Clause 56.07-4, which must be met, are:

1. "To minimise damage to properties and inconvenience to residents from urban run-off.
2. To ensure that the street operates adequately during major storm events and provides for public safety.
3. To minimise increases in stormwater run-off and protect the environmental values and physical characteristics of receiving waters from degradation by urban run-off."

Standard C25 sets out the normal way of meeting the Clause 56.07-4 objectives. In addition to other requirements, Standard C25 requires that urban stormwater management systems must be:

1. Designed to meet current best practice performance objectives for stormwater quality, as outlined in the *Urban Stormwater: Best Practice Environmental Management Guidelines* (Victorian Stormwater Committee, 1999) as amended.
2. Designed to ensure that flows downstream of the subdivision site are restricted to predevelopment levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts.

Standard C25 requires that urban stormwater management systems are designed and managed to the requirements of the relevant drainage authority. This is typically Council, with the exception of catchments of 60ha or more within the Melbourne Water drainage boundary, in which case the relevant drainage authority will be Melbourne Water.

3.1.5 Urban Stormwater Best Practice Environmental Management Guidelines for stormwater treatment

The objectives for on-site treatment relating to urban stormwater quality, as outlined by the *Urban Stormwater: Best Practice Environmental Management Guidelines* (Victorian Stormwater Committee, 1999), are:

- 80% retention of the typical urban annual load for Total Suspended Solids

(TSS)

- 45% retention of the typical urban annual load for Total Phosphorus (TP)
- 45% retention of the typical urban annual load for Total Nitrogen (TN)
- 70% retention of the typical urban annual load for gross pollutants (litter).

The guidelines prescribe that discharges for 1.5 year ARI (Average Recurrence Interval) be maintained at pre-development levels for stormwater treatments. Delaying regular low flow events reduces in-stream erosion that can often result from urban development.

These stormwater quality objectives reflect the level of stormwater management necessary to meet the SEPP (Waters of Victoria) (EPA Victoria, 2003) requirements and are the target design criteria for WSUD treatments.

This document is currently being reviewed and new objectives and guidelines will soon be available.

4. Melbourne Water Policies and Strategies

Melbourne Water has a series of policies, strategies and guidelines that support the implementation and management of constructed wetlands across the Port Phillip and Westernport region as part of the delivery of our waterway, drainage and floodplain management functions.

4.1 Enhancing Life and Liveability

Water is central to living. It sustains the communities we live in, the natural environment we value and the economy we depend on. Melbourne Water will improve the quality of life and prosperity of the region by providing safe, secure and reliable water services, desirable urban spaces and thriving natural environments supported by healthy waterways and bays.

Every day, Melbourne Water will work with others to develop shared solutions to manage rainwater, seawater, stormwater and treated sewage as one integrated system. This approach will deliver the best economic, social and environmental outcomes for all, now and in the future. Melbourne Water's Strategic Direction (2012)

4.2 Relationship Strategy

Relationships with customers and stakeholders are critical to Melbourne Water's success and reputation. The Relationship Strategy supports major change, by transforming Melbourne Water into a truly customer-centric organisation. This strategy puts customers at the centre of all we do and focuses our efforts on delivering value for them.

4.3 Service Delivery Strategy

Melbourne Water is a service delivery organisation; this is reflected in our vision of *Enhancing Life and Liveability*. Melbourne Water operates in a changing world with changing expectations, with increasingly vocal customer and consumer groups, population growth, climate change and technological developments. These issues highlight the need to re-think Melbourne Water's approach to the delivery of valued services to our customers.

The Service Delivery Strategy identifies what our customers want, anticipates evolving requirements, and explores the capabilities we require to deliver these services. The key outcome of the Service Delivery Strategy is the Customer Service Charter (Customer Charter), which defines the expected, measureable customer outcomes.

This strategy will transform the way that Melbourne Water does business and will drive the achievement of our vision of *Enhancing Life and Liveability*. Our commitment to the delivery of current core services is unchanged. This strategy unlocks new value for our customers by ensuring that our services continuously evolve.

4.4 Asset Management Strategy

The Asset Management Strategy enables the business to unlock value for our customers through applying the Asset Management Principles and Service Lifecycle to core services, and using them to deliver new and evolving services; we will deliver on the promises within the Customer Service Charters.

This strategy presents a wider view of asset management that incorporates existing built assets, natural assets, and "softer" assets such as people, systems, processes and information. This expanded view, combined with a Service Lifecycle approach, provides a greater array of alternative solutions for consideration, including non-asset solutions and multi-agency approaches for shared services.

Much of the value identified within *Service Delivery Strategy* requires implementation through the *Asset Management Strategy*.

4.5 Waterways and Drainage Strategy

The Waterways and Drainage Strategy, formally known as the Waterways Operating Charter, outlines our responsibilities, goals, services and work programs in managing waterways, drainage and floodplains.

The strategy is Melbourne Water's commitment to customers, stakeholders and the community. It sets robust key performance indicators, presented as 39 targets (and associated performance measures) against which progress is independently assessed every year.

It also shows how Melbourne Water's waterway, drainage and floodplain management services:

1. Contribute to Melbourne Water's vision of 'Enhancing Life and Liveability'
2. Relate to each other
3. Are integrated with services to be delivered by other organisations.

The strategy outlines a five year program of works and brings together commitments in strategies developed with input from customers and stakeholders. Costs associated

with undertaking work programs and fulfilling responsibilities in the strategy are primarily met by the Waterways and Drainage Charge, which is paid by all property owners in the Port Phillip and Westernport region.

Melbourne Water's legislated Statement of Obligations, which is a requirement of the Water Industry Act 1994, specifies that the Waterways and Drainage Strategy must be developed and implemented.

4.6 Stormwater Strategy

The Stormwater Strategy focuses on managing stormwater to protect and improve the ecosystem health of waterways and bays. The strategy articulates Melbourne Water's high-level strategic direction and approaches in managing stormwater in rural and urban areas. It involves Melbourne Water working with others to achieve multiple community outcomes for stormwater management, in relation to:

- Healthy waterways and bays,
- Wellbeing and amenity,
- Alternative water supply, and
- Public safety.

4.7 Healthy Waterways Strategy

The Healthy Waterways Strategy outlines Melbourne Water's role in managing rivers, estuaries and wetlands in the Port Phillip and Westernport region. It is closely linked to the Stormwater Strategy, which focuses on managing stormwater to protect and improve the health of waterways and bays. The strategy outlines that wetlands are not just purely stormwater treatment systems but also ecological and amenity assets for the community. Some of the key vision statements guiding the strategy include:

- To connect diverse and thriving communities of native plants and animals,

- To provide amenity to urban and rural areas and engage communities with their environment, and
- To sustainably manage balancing environmental, economic and social values.

4.8 Flood Management and Drainage Strategy

The Flood Management and Drainage Strategy aims to minimise flooding risks to public health and safety, property and infrastructure, and to increase community understanding and preparedness for floods.

The strategy defines five flood management objectives, and outlines actions to achieve these and guide our priorities and expenditure.

4.9 Planning and Building (Land Development Manual) Website

The Planning and Building (Land Development Manual) website provides Melbourne Water's policies, standards, specifications, guidelines, forms and documents to help the land development industry provide a safe effective system for dealing with run- off, ensuring appropriate flood protection and providing drainage services in the existing and growth areas of Melbourne. The information provided on this website helps us to protect our civil assets, waterways and floodplains in order to meet the environmental, economic, recreational and cultural needs of current and future generations.

For more information on any of the documents, please visit Melbourne Water's website.www.melbournewater.com.au

4.10 Planning for Constructed Wetlands

Melbourne Water's principle planning tool for stormwater management infrastructure in new growth areas are our Development Services Schemes (DSS). When development planning is undertaken outside a DSS area or in advance of a DSS being prepared, the developer should contact Melbourne Water to discuss the proposed stormwater management strategy.

4.11 Development Services Schemes

Melbourne Water's approach to managing constructed wetlands in growth areas is guided by our Development Services Schemes (DSS).

DSS provide an integrated plan of the drainage, waterway, water quality and flood protection works that are required to provide the most hydraulically and cost effective and environmentally sound stormwater management services to new developments within an urbanising catchment.

At the high-level of a DSS, constructed wetlands are conceptually designed and represented on Scheme plans. Melbourne Water uses a simple MUSIC model to predict the wetland area needed to meet stormwater management standards.

For more information on Melbourne Water's DSS, please refer to:
www.melbournewater.com.au\Planning-and-building

4.12 Funding Constructed Wetlands

Melbourne Water has three funding mechanisms in place for constructed wetlands. The first, our DSS, funds the planning, design and construction of stormwater infrastructure,

such as constructed wetlands, via the collection and reimbursement of development contributions. The second, assets, are 100% developer funded. The developer designs and constructs a constructed wetland in accordance with their subdivision (often outside a DSS) and once constructed, the asset is handed over to Melbourne Water. The third, our Waterways and Drainage Charge, can fund the delivery of constructed wetlands but also funds the ongoing operation and maintenance of wetlands once they have been constructed and handed over to Melbourne Water from developers.

4.13 Development Contributions

Melbourne Water's DSS distribute the cost for the entire infrastructure required to service the catchment across all of the developable land within the catchment on a per hectare basis. The amount landowners must pay Melbourne Water when they develop is based on this apportioned cost spread over the life of the DSS, which is typically 25 years, adjusted for the time value of money or 'Net Present Value' (NPV).

Melbourne Water advertises the contribution rates applicable for each DSS via our website. Please refer to our website and 'Principles' document for further information. These contributions go towards funding the capital cost of designing and constructing wetlands.

4.14 Scheme Reimbursements

The reasonable cost of designing and constructing wetlands is reimbursed by Melbourne Water via the DSS. Please refer to Melbourne Water's reimbursement principles on our website for further information.

4.15 Waterways and Drainage Charge

Under the Water Act (1989), Melbourne Water undertakes waterway, floodplain and drainage management within the Port Phillip and Westernport catchment boundaries.

Melbourne Water imposes a Waterways and Drainage Charge to all serviced properties located within our waterway management district. This funds a range of programs to protect and improve the health of our rivers and creeks, and to provide regional drainage services, flood protection and flood warning systems throughout the Port Phillip and Westernport region. The monies raised are collected on our behalf via the retail water companies.

Prior to the commencement of each operating period, which is usually 3 to 5 years in duration, Melbourne Water prepares and submits a Water Plan to the Essential Services Commission for approval. The Water Plan summarises the outcomes, activities and expenditures Melbourne Water proposes to deliver, and the prices it proposes to charge for the life of the plan, which includes the amount of the Waterways and Drainage Charge.

The Waterways Operating Charter sits alongside the Water Plan and establishes a blueprint for Melbourne Water's management of rivers, drainage and floodplains over the Water Plan period. It sets out our responsibilities and priorities, and supports the detailed financial and pricing information outlined in the Water Plan

4.16 Financial Principles

The following supporting financial principles apply to determining cost effective constructed wetland design, construction and maintenance:

Cost-benefit: Decisions about financially feasible design objectives beyond the non-negotiable are made based on a measure of the cost-benefit of achieving those objectives and willingness to pay.

Willingness to pay: The importance of achieving certain design objectives and outcomes will dictate whether Melbourne Water or the developer will be willing to pay to realise the outcome being sought.

Melbourne Water may be willing to pay where it is demonstrated that a wetland will manage impacts of urbanisation beyond the development itself.

If a land developer proposes enhancements to a wetland that are not required by Melbourne Water, but which will provide aesthetic and/or amenity benefit to the residents within their particular development, then the land developer should be willing to pay for the design and construction cost associated with those enhancements.

If Melbourne Water agrees to the enhancement, it will be Melbourne's Water's responsibility to maintain the enhanced wetland.

Melbourne Water will not be willing to pay for the design, construction or maintenance costs of any enhancements within the wetland reserve that are required by Council and/or will form area of Public Open Space that Melbourne Water will not maintain.

Beneficiary pays**:** Depending on who is willing to pay for which aspect of any proposed enhancement, the cost-benefit and extent of benefit will ultimately determine the beneficiary and therefore the party who ultimately pays. In many cases, it might not be a simple distinction between Melbourne Water and the land developer. Therefore, some form of cost share will need to be proposed. The basis of any cost share will take into account the principal driver behind the enhancement (i.e. who is proposing it and why) before factoring in where benefits are derived.

4.17 Managing Constructed Wetlands

The majority of regional constructed wetlands have catchment areas that place them in Melbourne Water's responsibility for ownership and maintenance. However, Council is likely to take ownership over constructed wetlands if the catchment area is smaller and the treatment is more localised. The catchment area for the constructed wetland is usually the main factor used when determining the asset owner.

4.17.1 Delineation of Melbourne Water and Council Ownership

Melbourne Water and the relevant council are the two key authorities with a management interest in constructed wetlands. This section provides a brief overview of this shared management interest in constructed wetlands.

4.17.2 Ownership of Wetland Systems

In 1928, the Melbourne Metropolitan Board of Works (MMBW) established an agreement with the then 38 metropolitan municipalities about the distinction between drains and main drains to be applied to pipelines, based on calculations of flow capacity. The

agreement was supported by a hydraulic engineer's report which determined that a main drain was classified where the catchment area exceeded 60 hectares. Assets in catchment areas greater than 60 hectares became MMBW (now Melbourne Water) assets, and those assets with catchment areas less than 60 hectares became municipal (Council) assets.

As MMBW's, and subsequently Melbourne Water's, management responsibility evolved over time, the 60 hectare 'rule' has since been generally applied to all stormwater quality treatment assets such as wetlands.

4.17.3 Ownership of the wetland and surrounding open space area

In developing areas, Council or Melbourne Water can own wetlands and surrounding open space area. Ownership is created via a Reserve vested in either Council or Melbourne Water. Typically, the preference is for Council to own the Reserve and Melbourne Water to have maintenance rights to the wetland via the creation of a Memorandum of Common Provisions Easement (MCP AA1107). The extent (coverage) of this Easement is generally the same as the extent of the Reserve or, as a minimum, the Easement must cover the flood extent of a 1 in 100 year ARI flood event.

A key part of constructed wetland design is the delineation of which components of the wetland and surrounding open space area are to be owned and maintained by Council and Melbourne Water. The preparation and execution of a 'Maintenance Agreement' is a key requirement of the wetland design process. Each Council may have different requirements when it comes to their maintenance and ownership obligations. Further information on the creation of Maintenance Agreements is detailed on Melbourne Water's Land Development Manual website.

5. Document History

Date	Reviewed/ Actioned By	Version	Action
December 2020	Senior Asset Practitioner – Water Quality	2	Updated template and links