Healthy Waterways Strategy

Regional Monitoring and Evaluation Plan

Working together for healthy waterways

Contents

Acknowledgement to Country

We acknowledge and respect Traditional Owners and Aboriginal communities and organisations.

We recognise the diversity of their cultures and the deep connections they have with the region's lands and waters.

We value partnerships with them for the health of people and Country.

We pay our respects to Elders past and present, and we acknowledge and recognise the primacy of Traditional Owners' obligations, rights and responsibilities to use and care for their traditional lands and waters.

Contributors

This preliminary draft of the Regional MEP has relied on a significant body of knowledge inputs from many knowledge domains in which influence waterway health.

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We also acknowledge our committed service providers who supported the development of the Regional MEP. Drafting and technical support was provided by Karen White from Whitewater Consultancy.

Discussions with other agencies are planned for the second draft of the Regional MEP in early 2021.

Abbreviations and Acronyms

ARI	Arthur Rylah Institute for Environmental Research, DELWP
AVIRA	Aquatic Values Identification and Risk Assessment
CMA	Catchment Management Authority
DELWP	Victorian Department of Environment, Land, Water and Planning
EPA	Environmental Protection Authority Victoria
GDE	Groundwater-dependent ecosystem
HSM	Habitat Suitability Models
HWS	2018 Healthy Waterways Strategy
IWC	Index of Wetland Condition assessment/ methodology
IWM	Integrated Water Management
KEQ	Key Evaluation Question (from the 2019 MERI Framework)
MEP	Monitoring and Evaluation Plan
MERI Framework	Monitoring, Evaluation, Reporting and Improvement Framework (Melbourne Water 2019)
MWRPP	Melbourne Water Research-Practice Partnership; a research partnership between Melbourne Water and the Waterway Ecosystem Research Group of the University of Melbourne
PPW	Port Phillip and Westernport catchment region
PPWCMA	Port Phillip and Westernport Catchment Management Authority
PV	Parks Victoria
RLG	Regional Leadership Group – the decision-making body overseeing implementation of the HWS
RPO	Regional Performance Objective
SCPO	Sub-catchment Performance Objectives
SoBS	Melbourne Water Site of Biodiversity Significance
WPO	Wetland Performance Objective
WSUD	Water sensitive urban design
WTP	Melbourne Water's Western Treatment Plant, Werribee

Introduction

The Regional Monitoring and Evaluation Plan describes the monitoring indicators and reporting requirements needed to effectively track the progress towards regional performance objectives set in the Healthy Waterways Strategy. It outlines how to evaluate and measure success for the objectives.

1 Background and context

1.1 The 2018 Healthy Waterways Strategy MERI framework

The 2018 *Healthy Waterways Strategy* (HWS) (Melbourne Water 2018) is the overarching planning document for the management of rivers, wetlands and estuaries in the Port Phillip and Westernport region. It is a 10-year plan that takes a 50-year outlook and aims to ensure that the values of waterways in the region are protected and improved.

The development of the HWS was led by Melbourne Water, with a stakeholder co-design approach used to determine collaboratively the goals and management actions to be undertaken in each major catchment (Yarra, Maribyrnong, Werribee, Westernport and Dandenong).

The HWS commits Melbourne Water to developing and implementing a Monitoring, Evaluation, Reporting and Improvement (MERI) plan to support implementation. To address this, Melbourne Water prepared a MERI Framework (Melbourne Water 2019), under which there are three Monitoring and Evaluation Plans (MEPs), one for each waterway "asset class": rivers/streams, estuaries and wetlands.

In addition, this draft Regional MEP is for the regional performance objectives (RPOs) outlined in the HWS. This draft is part of Phase 1 of the Regional MEP development and includes background on why each RPO was developed and what change or success looks like by the end of the Strategy in 2028. It also identifies the Melbourne Water team responsible for reporting on progress and identifies the potential relevant HWS co-delivery partners to contribute to the reporting.

Consultation and engagement with HWS delivery partners will be the focus of Phase 2 of the Regional MEP development in 2021 to review the indicators of success by 2028 and to assist with the development of assessment criteria.

Key Evaluation Questions

Under the MERI Framework (Melbourne Water 2019), key evaluation questions (KEQs) were developed to ensure we measure the effectiveness, impact, efficiency, appropriateness, and legacy of the HWS (see Table 1).

Monitoring requirements outlined in this MEP will contribute directly to addressing KEQ 1 in the MERI Framework. The KEQs 2 & 3 are addressed in the Rivers, Estuaries and Wetlands MEPs and KEQs 4 and 5 are addressed in the MERI Framework rather than this Regional MEP.

Table 1. Healthy Waterways Strategy key evaluation questions (from Melbourne Water 2019).

Evaluation	When it is asked
KEQ No. 1 - To what extent have the performance objectives of the Strategy been achieved?	Annual Event-based (as needed) Mid-term (2022)
KEQ No. 2 - To what extent has progress been made towards the longer-term environmental condition targets for rivers, wetlands and estuaries?	Mid-term (2022) End of Strategy (2026)
KEQ No. 3 – What is the state of waterway values?	Mid-term (2022) End of Strategy (2026)
KEQ No. 4 -To what extent have the delivery methods of the Strategy been cost effective and efficient?	Mid-term (2022) End of Strategy (2026)
KEQ No. 5 – To what extent have legacy items been identified and managed for?	End of Strategy (2026)

Reporting timeframes

Although the HWS has a temporal scope of ten years, 2018/19 – 2027/28 (inclusive), data will be needed to inform reporting midway, in 2022, and again in 2026 (to allow time for evaluation and for findings to be adopted before the preparation of a new strategy) (see Figure 1).

Therefore, reporting during the HWS will involve a mix of **output** reporting (the measurable result of management activities, such as development of an online website for reporting) and **outcome** reporting (the resulting impact of these activities, such as increased participation).

Years 1-2 of strategy implementation (i.e. 2018/19 and 2019/20) are foundation years and involve: "*finalising MEPs, refining indicators, improving systems and data management, collecting phase 1 data, testing evaluation methods and developing report templates and conducting the first annual review* (Melbourne Water 2019)." All of the MEPs will be reviewed periodically, and no later than mid-term (2022) to ensure that new techniques and any safety issues are addressed.

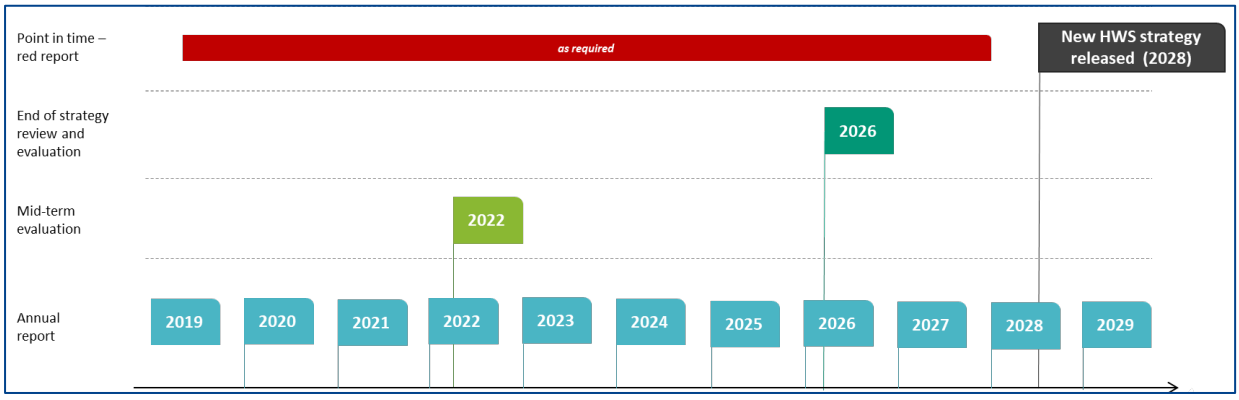

Figure 1. Reporting timeline for the 2018 Healthy Waterways Strategy (Melbourne Water 2019).

1.2 Our Regional Monitoring and Evaluation Plan

This plan fulfils the requirement for a Regional MEP and describes the requirements for regional performance objectives to be measured consistently for the duration of the HWS. The document will be updated over time, but particularly at mid-point of the HWS, to adopt learnings and efficiencies, such as developments in monitoring methods and analytical techniques. Similar information for the other asset classes can be found in the River MEP, Wetlands MEP and Estuaries MEP.

This MEP presents a summary of planned monitoring and evaluation for the RPOs in the HWS. It adopts and builds upon some existing monitoring programs and links to performance objectives in the other three MEPs. So, where comprehensive or contextual information is available in existing documents these are referred to, rather than repeating detailed information here.

The Regional MEP is for all waterways in the Port Phillip and Western Port (PPWP) region. It focuses on the:

- Indicators and methods for monitoring and evaluation for HWS regional performance objectives
- Accountabilities for monitoring, reporting and evaluation
- Timeframes and reporting

The following is an overview of the contents of this MEP so that the reader can identify the part that is most relevant to their work and interest.

MEP section	Title	Purpose	Key Audience
2	**About the Regional MEP**	Describes key concepts from the Monitoring Evaluation Reporting Framework *How the MERF applies to the regional performance objectives* *Approach to reporting and evaluation*	Implementers of the Strategy (e.g. MW, PV, local councils, IWM forums) Interested community groups/ members Researchers Regional Leadership Group
Part A	**Regional Performance Objectives** *How are the regional performance objectives tracking?*	Determining how Regional Performance Objectives will be tracked and evaluated. *Guide on ground works* *Annual planning and prioritisation* *Presented at regional scale with links to sub-catchment scale where applicable* *Focus is on **annual** reporting*	Implementers of the Strategy (e.g. MW, PV, local councils, IWM forums) Interested community groups/ members Regional Leadership Group

2 About the Regional MEP

2.1 Waterways in Port Phillip and Westernport Bay

Throughout this Regional MEP, the term 'waterways' refers collectively to rivers, wetlands and estuaries. These key waterway elements are briefly described below:

Rivers – refers to rivers, creeks, streams and smaller tributaries, including the water, bed, banks, and adjacent land (known as *riparian* land).

Wetlands – areas, whether natural, modified or artificial, subject to permanent or temporary inundation, that hold static or very slow moving water and develop, or have the potential to develop, biota adapted to inundation and the aquatic environment. They may be fresh or saline. Examples of wetlands include swamps or billabongs.

Estuaries – where a river meets the sea, including the lower section of a river that experiences tidal flows where fresh water and saline (salty) water mix together.

The waterways in the region are located in five major catchments; Werribee, Maribyrnong, Yarra, Dandenong and Westernport & Peninsula (Figure 2). These catchments are divided into sub-catchments and sometimes reaches to provide a scale appropriate to measure change in key values.

Figure 2. Rivers and catchments in Port Phillip and Western Port region

2.2 Waterway Targets (values and conditions) and Performance Objectives

The Regional MEP communicates the approach to monitor, evaluate, report and adopt learnings for HWS targets and objectives. The targets and objectives provide quantitative measures of progress towards the goals and vision within the HWS. There are three different types of targets and objectives in the HWS:

- Performance objectives targets
- Condition targets
- Key values targets

The HWS defines waterway condition as the overall state of the waterway and the key processes that underpin a well-functioning ecosystem (Melbourne Water, 2018). It is assumed that improvements in waterway conditions will improve waterway key values.

They have different timescales associated to them in reference to the period of time it can take for a measurable change to occur and be detected (Figure 3).

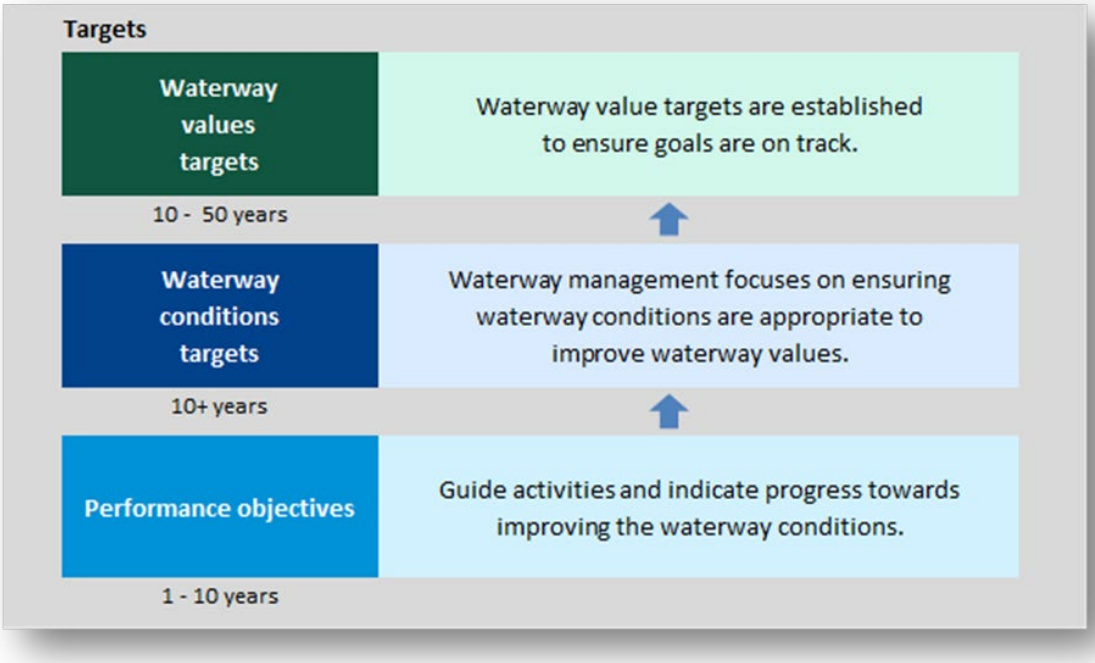

Figure 3. Hierarchy of targets and objectives in HWS

Nine **Key values** have been chosen as representatives of a broader range of social and environmental waterway values (Melbourne Water, 2018).

Waterway condition and its links to key values in the HWS were developed from the HWS Conceptual Models (HWS Resource Document, 2020). The conditions identified in the HWS for the different natural asset classes are:

Rivers

- vegetation extent
- vegetation quality
- physical form
- instream connectivity
- flow regime
- water quality – recreational
- water quality - environmental
- stormwater
- litter
- access
- participation

Estuaries

- flow regime
- tidal exchange
- longitudinal extent
- water quality
- estuarine wetland connectivity
- estuarine vegetation
- access

Wetlands

- vegetation condition
- wetland habitat form
- Wetland buffer condition
- water regime
- wetland water quality

Current state and targets

The **current state** of key values and the waterway conditions (as at 2017) that support them are measured by a series of variables outlined in the HWS Resource Document (Melbourne Water, 2020); the results are reported at a high level in the Healthy Waterways Strategy. More specific detail at the sub-catchment scale is provided in each of the Co-designed Catchment Programs.

Improving the current state (or sometimes merely maintaining the state due to significant threats) of the key values and the waterway condition that supports them helps to progress towards the catchment goals and vision. **Targets** have been set for rivers, estuaries and wetlands to quantify the amount of improvement or threat mitigation that is required to meet the catchment goals and vision within a set timeframe.

Performance objectives

The short-term (one to ten-year quantitative steps) by which targets can be achieved are described in the HWS by **performance objectives**. Performance objectives provide short-term, tangible outcomes which indicate progress towards less tangible, long-term outcomes (i.e. change in condition or in key value).

The terminology 'performance objectives' is aligned with the requirements of the *State of Victoria Yarra River Protection (Wilip-gin Birrarung Murron) Act (2017)*.

According to the HWS, the rivers, estuaries and wetland performance objectives should have the following attributes:

- are outcome-based, and not based merely on actions undertaken
- enable a partnership approach with other parties that undertake waterway management actions
- are quantitative, measurable and achievable in 10 years
- inform short-term management aims through annual planning processes
- describe where they link to environmental conditions
- are underpinned by transparent and best available information and knowledge
- are able to be assessed without needing to measure waterway values and condition outcomes on every asset.

The regional performance objectives are different and were developed with diverse attributes:

- are outcome or output based
- represent key threats, issues or initiatives that would benefit from a regional approach
- represent some of the responsibilities of HWS partners and enable a partnership approach with other parties that undertake waterway management actions
- are qualitative and more challenging to measure
- sometimes link to existing strategies, plans or programs to ensure they continue

Program Logic

The Program Logic for waterways in Figure 4 shows the relationship between the performance objectives and how they link to changes in environmental conditions and values. It illustrates the time frames across which change is expected to be detectable.

The program logic recognises that management activities and outcomes occur over a range of timeframes. It covers:

- Aspirational long-term regional vision and catchment goals: (50+ years)
- Longer term outcomes - key values targets (~ 20+ years - addressed in the Rivers, Estuaries and Wetlands MEP documents in Part B)
- Intermediate outcomes - waterway condition targets (~10+ years – addressed in the Rivers, Estuaries and Wetlands MEP documents in Part C)
- Immediate outcomes– performance objectives (1-10 years – addressed in this document in Part A)
- Activities – on-ground actions or outputs, partnerships, governance, tracking performance (annual – in this document addressed in Part A)

Due to the nature of the RPOs, some sit within the program logic as project activities, most sit at immediate outcomes and a few sit at intermediate outcomes.

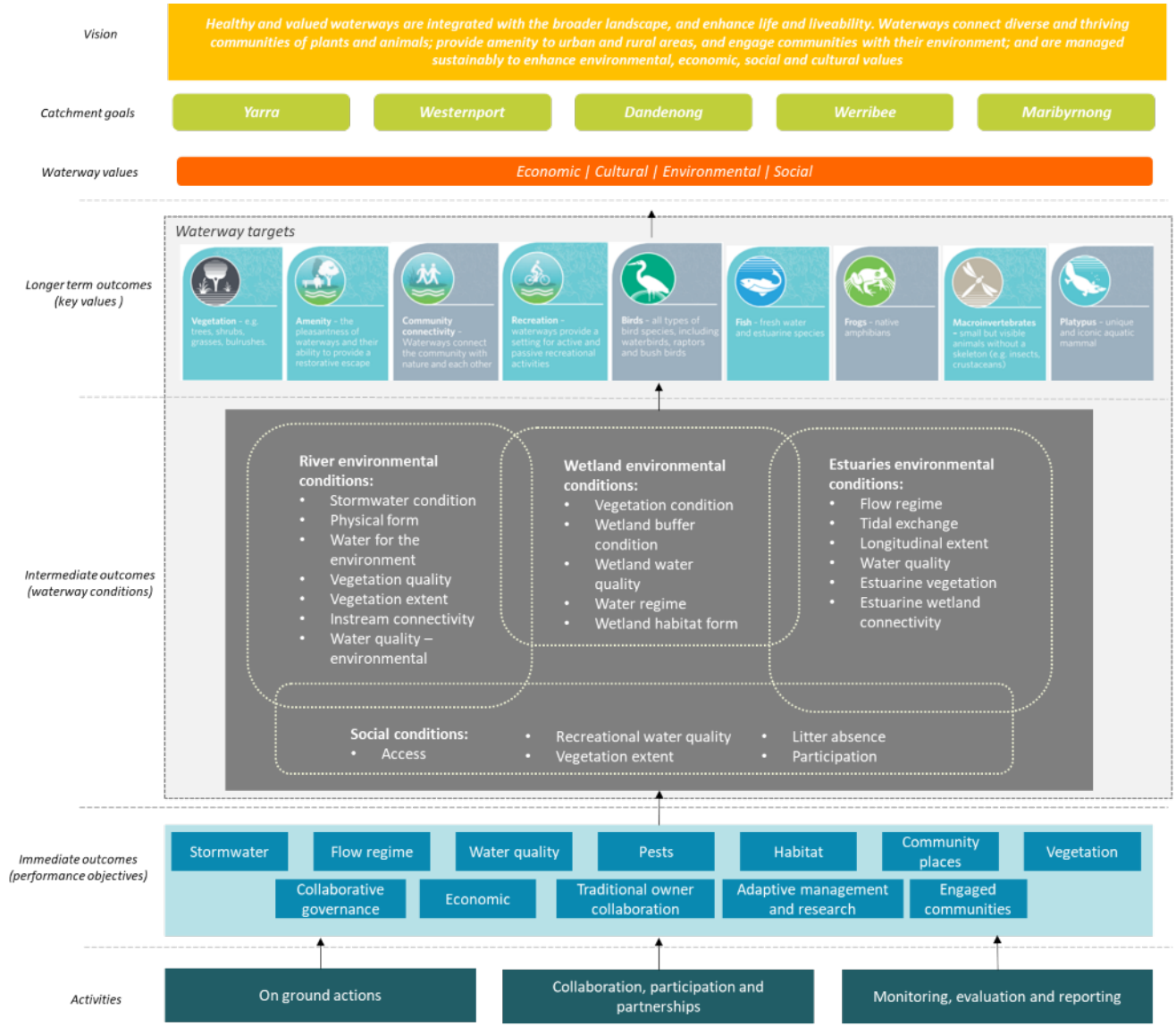

Figure 4. Program logic of Healthy Waterways Strategy

2.3 Evaluation and reporting

Tracking progress towards meeting the three different types of target and objectives, allows us to know if our actions are creating the change that is outlined in the HWS vision and goals. But tracking progress isn't enough, we also need to evaluate our efforts to understand if the actions we are doing are the best ones to create the change. It is through evaluation that we are able to learn and adapt to ensure the HWS remains effective over the 10 year period. It is for this reason that the Regional MEP will be updated over time, but particularly at mid-point of the HWS period (2022/23), to adopt learnings and efficiencies.

An independent web-based reporting system will be used, with annual, mid-term (i.e. 2022/23) and end of strategy (i.e. 2028) reporting. Delivery Partners, community groups and the Regional Leadership Group (RLG) will all utilise the evaluation results (annual, mid-term and final) to understand progress, guide annual planning and drive continuous improvement. The HWS governance processes will involve the RLG where significant findings require further deliberation and direction. These processes are in development with the RLG and will be documented in the MERF. The HWS Science Panel will also provide expert advice on evaluation and communicate recommendations to the RLG.

Our approach to evaluation and reporting is summarised below:

Annual Reporting

The focus of annual reporting will be on progress towards achieving the change agreed for each RPO by 2028.

Progress towards the Regional Performance Objectives will be reported annually. Reporting will be collated, synthesised and communicated through the Healthy Waterways website https://healthywaterways.com.au/).

Reporting of RPOs will include:

Status updates in the form of not started, in progress and complete.

Progress reports in the form of a brief update (100 – 200 words) on progress made each year towards achieving the change agreed for each RPO by 2028. Progress reports will be used at mid-term to help decide if an evaluation is required.

Case studies where appropriate and will highlight stories of success, or challenge, and focus on the achievements of a range of strategy partners or collaborations. These will typically be four to five paragraphs in length, and be more story-based and be accompanied by pictures or possibly a brief video.

Mid-term review evaluation process

The approach to the mid-term evaluation for Regional Performance Objectives is still in development and will be progressed as part of Phase of the Regional MEP development. The mid-term evaluation will focus on answering KEQ 1:

KEQ No. 1 - To what extent have the performance objectives of the Strategy been achieved?	Mid-term (2022/23)

The RLG will be play a key role in deciding what gets evaluated and decisions resulting from evaluation outcomes. The Science Panel will also provide expert advice on the design of evaluations and critique of the findings.

The detail of the mid-term evaluation of the RPOs is still to be determined and will be the focus of Phase 2 of the Regional MEP development. However, the mid-term evaluation will align with the approach outlined in the Rivers MEP and will consider the following:

- reviewing progress of regional performance objectives against the assessment criteria
- highlighting any major threats to RPOs that have not been previously identified.
- re-prioritising management if required (based on this updated information) for the second half of the strategy
- re-prioritising monitoring if required
- identification of new regional performance objectives that have arisen from strategy partners or community

Given the breadth of the HWS (i.e. social, cultural, environmental and economic) and the complex governance arrangements it is anticipated that the mid-term evaluation will be conducted over an 18 month to 2-year time-frame.

The outcome of the mid-term evaluation of particular RPOs will be reported via HWS governance processes. If an RPO needs to be altered, or is reliant on actions no longer prioritised by partner organisations, this will need to brought to the attention of RLG to resolve and decide the way forward.

End of strategy review

While the details of the end of strategy evaluation requires further development, the main focus and deliverables are outlined below:

The evaluation should link back to the Key Evaluation Questions in the MERI particularly those relating to efficiency, legacy and appropriateness.

The final evaluation of RPOs should consider:

- Which RPOs were completed earlier than expected and what were the reasons for this?

- Which RPOs are unlikely to be met by the end of the strategy? What were the reasons for this?

- A strengths, weaknesses, opportunities, threats (SWOT) analysis on the approach used for evaluating RPOs

- Would RPOs that didn’t have a rubric benefit from one in the future?

Part A: Regional performance objectives

Overview

Tracking progress against regional performance objectives (RPOs) allows us to understand if the effort being assigned to different investment programs is adequate, or whether different approaches are more applicable in different areas. Some RPOs have readily trackable specific indicators (e.g. Number of participants). Others are described more qualitatively, and indicators and evaluation approaches developed accordingly.

Progress towards achievement of HWS regional performance objectives (RPOs) will be tracked and reported to address KEQ 1 in the HWS MERI Framework: "*To what extent have the performance objectives of the Strategy been achieved?*" (Melbourne Water 2019).

The timeframe for reporting on RPOs will be annually, mid-term and end of strategy.

The Healthy Waterways Strategy website (https://healthywaterways.com.au/) will be used to share information on progress toward all RPOs. This reporting will include annual tracking progress and a mid-term evaluation of performance (i.e. on-track/off-track for each RPO).

The mid-term evaluation of RPOs will align with the approach outlined in the Rivers MEP (Melbourne Water, 2020b) and the details (i.e. such as assessment criteria) will be developed through Phase 2 of the Regional MEP development.

The outcome of mid-term evaluations of particular RPOs will be reported via HWS governance processes including the Regional Leadership Group (RLG). The RLG is the decision-making body to determine if and how any regional performance objectives may be modified.

There are 45 RPOs and they have been grouped to simplify how they are monitored, evaluated and reported (Table 2). This nomenclature helps to structure the monitoring, evaluation and reporting into similar indicators and evaluation approaches.

Each RPO group has a section with further details about links to waterway conditions, values and other wetland, river or estuary performance objectives. The original intent of the RPO is documented alongside what change or success looks like by 2028. The Melbourne Water teams and likely delivery partners responsible for reporting on progress of each RPO is also outlined. Marker

Each section also has an indication of areas for further elaboration during Phase 2 of the Regional MEP development such as what data needs to be collected when delivering works associated with these RPOs alongside assessment criteria outlining how we will determine if these RPOs are on track at mid-term review.

Table 2. Summary of HWS groups and themes for Regional Performance Objectives (RPOs)

RPO group	Regional Performance objectives
Cultural	RPO-1 Traditional Owners and Aboriginal Victorians have an increased expertise in contemporary land and waterway management, waterway science and lore. RPO-2 Partnership projects build on what is working. Expertise developed in one project is applied in others. RPO-3 Traditional Owner groups and Aboriginal Victorians are supported by industry partners to influence the agenda for waterway management by proactively developing communications, resolutions or project scopes and seeking industry partners. RPO-4 Aboriginal and Traditional Owner cultural awareness training is available to all industry professionals and is actively pursued. RPO-5 Cultural competency is valued as a career skill and leads to ongoing relationships. RPO-6 Partnerships are fostered between Traditional Owner groups and research groups, and Traditional Owner groups and community groups. RPO-7 Public events led and/or organised by Traditional Owners are regular and frequent.
Economic	RPO-8 Environmental-economic accounts are developed for the region's waterways using contemporary international standards, and are used to demonstrate the returns on catchment and waterway investment. RPO-9 Environmental-economic accounting is incorporated into Healthy Waterways Strategy monitoring, evaluation and reporting (MER) by 2023.
Adaptive research and management	RPO-10 An adaptive pathways approach is adopted to understand and manage the risks of climate change on waterways. RPO-18 Critical waterway health assets including stormwater treatment systems, fishways and erosion control structures, are maintained for their designed purpose or the same outcomes are delivered by alternative means. RPO-23 The potential impacts of emerging contaminants of concern such as microplastics, pesticides and pharmaceuticals, and toxic chemicals are better understood and mechanisms to respond collaboratively developed. RPO-42 Wetland condition information and prioritisation with a focus on vulnerable wetlands is understood and informs collaborative planning.

RPO group	Regional Performance objectives
	RPO-45 Research partnerships with universities and other research institutions are in place to address the key research areas and build our knowledge and capacity to efficiently and effectively achieve the Healthy Waterways Strategy performance objectives and targets.
Water for the environment	RPO-11 Understanding of groundwater dependent ecosystems is improved and opportunities to maintain or improve these continue to be investigated. RPO-12 Water for the Environment continues to be managed and delivered to the region's rivers and wetlands and recovery options continue to be investigated.
Stormwater	RPO-13 Industry capacity for whole of water cycle and stormwater *management is* increased to enable collaboration, improved access to information and knowledge, and a skilful and capable industry with strong established networks. RPO-14 Standards, tools and guidelines are in place and implemented to enable re-use and infiltration of excess stormwater, and protect and/or restore urban waterways.
Water quality	RPO-17 Water quality in waterways and bays is improved by reducing inputs of sediment and other pollutants from urban construction and development. RPO-24 Risk-based programs are in place to mitigate sources of urban pollution (licenced and unlicensed discharges) to protect bays and waterways. RPO-25 Programs, standards, tools and guidelines are in place to manage nutrients, sediments and other pollutants from rural land in priority areas.
Litter	RPO-26 Methods are in place to assess volume and source of litter to inform and promote litter reduction programs. RPO-27 Incidence of littering and illegal dumping is reduced through raised community awareness and knowledge, infrastructure and enforcement.
Vegetation	RPO-28 Seasonal Herbaceous Wetland vegetation communities are identified and a management program is in place to protect them on public and private land. RPO-29 Programs, standards, tools and guidelines are in place to protect wetland vegetation communities from urban and rural threats, including adequate planning controls.

RPO group	Regional Performance objectives
	RPO-30 Climate change resilient revegetation management practices are understood and implemented by selecting plant species, provenances and vegetation communities that are suited to projected future climatic conditions.
Pests	RPO-31 A risk-based approach is adopted to prevent, eradicate and contain pest plants and animals (including deer) and protect waterway assets.
Habitat	RPO-32 Programs are in place to protect and enhance sites of biodiversity significance associated with the region's waterways, such as through Melbourne Water's Sites of Biodiversity Significance Strategy.
Community places	RPO-19 Options to transform modified waterways by creating more natural, community-loved spaces are identified and implemented. RPO-20 The amenity, community connection and recreation values of wetlands are better understood. Performance objectives are developed to enhance these values. RPO-21 The multiple benefits of waterways investment are tracked and understood. RPO-22 Cooler, greener and more liveable urban environments are created through revegetation and as part of managing excess stormwater. RPO-43 The social values framework, information and methods used to develop values assessments, targets and performance objectives are further developed and improved during the life of the Strategy.
Engaged communities	RPO-37 Participation rates in education, capacity building, incentive programs and citizen science activities have increased and enable greater levels of environmental stewardship for our waterways. RPO-38 Key messages, stories and resources for waterways and waterway health are collaboratively developed and broadly distributed, increasing community knowledge and engagement around waterways RPO-39 Systems and pathways to share knowledge and information between communities and stakeholders have been developed and expanded to empower communities to participate and influence waterway management (for example, digital portals, social media, Communities of Practice, signage programs). RPO-40 The profile of waterways is lifted, local connections to waterways are increased, and leaders in waterway management are celebrated and fostered.

RPO group	Regional Performance objectives
Collaborative governance	RPO–15 Victoria's planning system is used effectively to protect and enhance waterway values. RPO–16 Protection mechanisms are in place for headwaters to ensure that they are retained as features in the landscape for environmental, social, cultural and economic benefits. RPO–33 A Region-wide Leadership Group and Catchment Implementation Forums are established to support work towards the vison and goals of the Healthy Waterways Strategy at the regional and catchment scales. RPO–34 Waterway Labs are established as needed to tackle complex or region-wide priorities. RPO–35 The effectiveness of the Leadership Group, Catchment Implementation Forums and Waterways Lab are evaluated, through ongoing feedback, and one interim and one final assessment undertaken during the life of the Strategy. RPO–36 The Catchment Implementation Forums improve the coordination of information and activities by catchment stakeholders and communities (while ensuring waterway management includes the whole of catchment perspective). RPO–41 A monitoring, evaluation and reporting plan is in place by 30 June 2019. RPO–44 Web-based systems are established to report performance and measure outcomes of the catchment implementation forums (by 30 June 2020).

3 Cultural

Cultural values are based on the physical and spiritual connection of people to land and waters. Cultural values are both contemporary and ancient.

Aboriginal Traditional Owners have lived in this region for tens of thousands of years, and have connection with the landscape and waterways through significant places, artefacts, language, stories and traditions.

While European settlers and subsequent waves of migrants have a comparatively short history of a couple of hundred years, they too have forged cultural and spiritual connections which are important to them.

The Port Phillip and Westernport region is home to several Traditional Owner organisations from the *Wada wurrung, Woi wurrung* and *Boon wurrung* language groups (Figure 5).

Traditional Owners' connection to this region has been damaged by the processes of colonisation and urbanisation. Traditional Owners have been excluded from waterway management since the first days of colonisation.

The sad outcome of this exclusion is twofold: contemporary waterway managers who lack the unique and proven perspective of Traditional Owners, and Traditional Owners who lack the opportunity, skills and resources to manage their Country in a contemporary context.

The regional performance objectives in the Healthy Waterways Strategy were developed in partnership with the Wurundjeri Land and Compensation Cultural Heritage Council and approved by the Bunurong Land Council Aboriginal Corporation and the Wathaurung Aboriginal Corporation (Wadawurrung).

The *Aboriginal Participation Guidelines for Victorian Catchment Management Authorities* underpinned this engagement. The Guidelines:

- commit the *Healthy Waterways Strategy* and its implementation partners to engage and work with Traditional Owners and Aboriginal communities to manage and improve the health of land and waters
- commit the *Healthy Waterways Strategy* to be transparent in supporting Traditional Owner and Aboriginal community aspirations for recognition of rights, reconciliation, participation, employment and economic development through natural resource management
- act on the commitment of all *Healthy Waterways Strategy* implementation partners to strengthen their cultural competency
- build upon existing experiences, procedures and work practices
- complement the existing Community Engagement and Partnerships Frameworks of *Healthy Waterways Strategy* implementation partners.

There are seven cultural RPOs in the HWS and these are summarised in Table 3.

Table 3. Summary Cultural RPOs

RPO Group	RPO ID	RPO description
Cultural	1	Traditional Owners and Aboriginal Victorians have an increased expertise in contemporary land and waterway management, waterway science and lore.
	2	Partnership projects build on what is working. Expertise developed in one project is applied in others.
	3	Traditional Owner groups and Aboriginal Victorians are supported by industry partners to influence the agenda for waterway management by proactively developing communications, resolutions or project scopes and seeking industry partners.
	4	Aboriginal and Traditional Owner cultural awareness training is available to all industry professionals and is actively pursued.
	5	Cultural competency is valued as a career skill and leads to ongoing relationships.
	6	Partnerships are fostered between Traditional Owner groups and research groups, and Traditional Owner groups and community groups.
	7	Public events led and/or organised by Traditional Owners are regular and frequent.

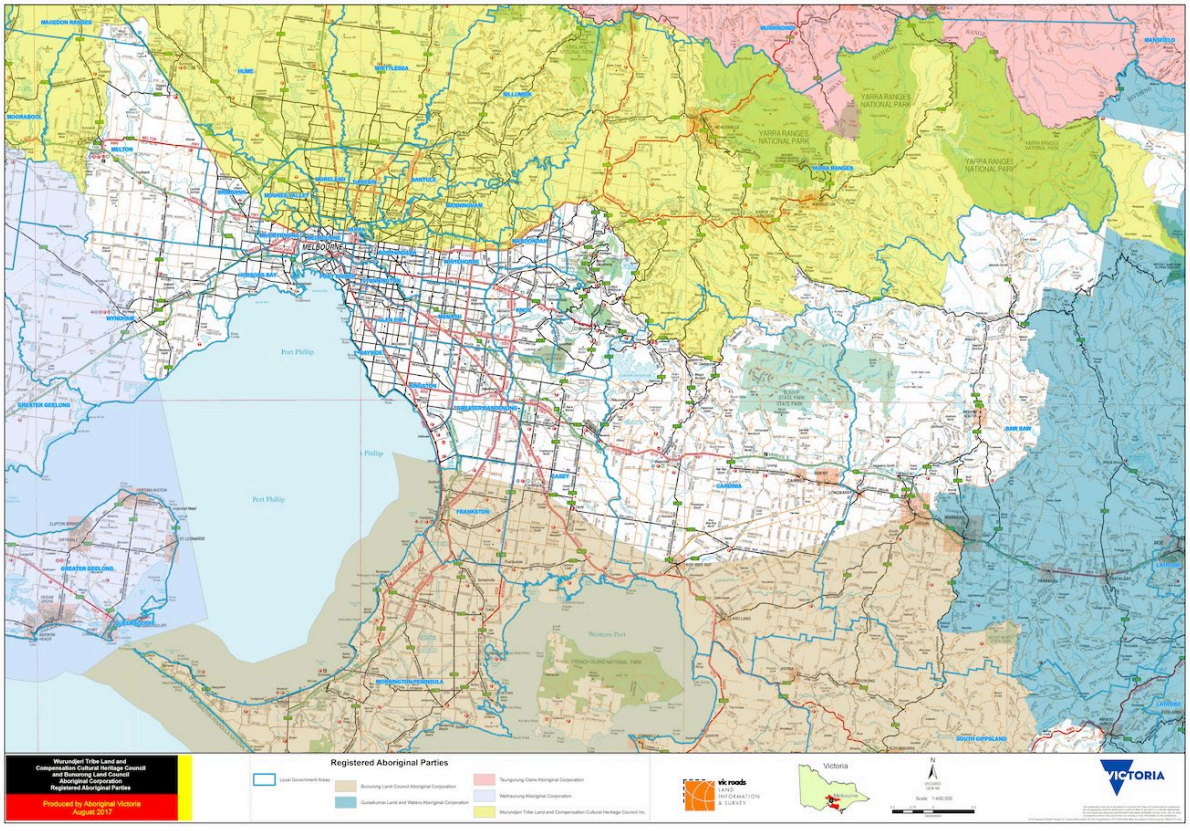

Figure 5. Registered Aboriginal Parties within the Melbourne Region

3.1 Cultural RPOs intent

A summary of why each of the cultural RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. Further discussions with each of the Traditional Owner organisations are planned to further describe what outcomes are sought from the HWS.

Table 4. Context and performance expectations of cultural RPOs

RPO description	Reason for RPO(s) being developed	What does change look like by 2028? (outcomes)
1. Traditional Owners and Aboriginal Victorians have an increased expertise in contemporary land and waterway management, waterway science and lore.	The HWS has a goal that Traditional Owners have a recognised role as custodians of waterways and their cultural values. Their unique perspective and knowledge allows them to influence the agenda for waterway management and actively participate in caring for their Country. This goal is supported by a series of agreed principles on how we will achieve this goal: • Traditional Owners are involved at all levels of waterway management – planning, prioritisation and delivery. • Traditional Owner groups have the resources and expertise to support a self-sustaining 'waterway business'. • Traditional Owners are included in planning and prioritisation processes as early as possible. • Where possible, waterway management programs are designed to match the existing capability of Traditional Owner groups and participation increases their capability for involvement in future programs.	Traditional Owners are supported in self determining how they wish to be involved in representing their role as custodians of waterways. Traditional Owners are involved in multiple levels of waterway management – planning, prioritisation and delivery. Where possible, waterway management programs are designed to match the existing capability and known aspirations of Traditional Owner organisations (i.e. Wurundjeri Land and Compensation Cultural Heritage Council, Bunurong Land Council Aboriginal Corporation and the Wathaurung Aboriginal Corporation) and participation increases their capability and prosperity for involvement in future programs. Waterway management is a job that an individual Traditional Owner can aspire to. Training courses are available for Traditional Owners that provide a pathway for employment in the water industry. Opportunities for business arrangements with Traditional Owners and Aboriginal enterprises to deliver value-for-money catchment and water services. Melbourne Water will have formal partnership arrangements in place with each Traditional Owner organisations in the region and will support co delivery partners to do likewise. These formal arrangements will

	• The internal collaborative processes of Traditional Owner groups are supported with time and/or resources by waterway management partners. • Waterway management is a job that an individual Traditional Owner can aspire to. The seven performance objectives were developed in partnership with the Wurundjeri Land and Compensation Cultural Heritage Council and approved by the Bunurong Land Council Aboriginal Corporation and the Wathaurung Aboriginal Corporation (Wadawurrung) to work towards achieving the HWS goal.	document Traditional Owner aspirations and ensure there are pathways for active participation in planning and decision making. The formal arrangements will align with the Healthy Waterways Strategy RPOs where appropriate.
2. Partnership projects build on what is working. Expertise developed in one project is applied in others.		Partnership projects proceed at a pace that respects Traditional Owners other obligations and allow upskilling and inclusion of diverse individuals and communities. They also facilitate intergenerational knowledge transfer. Traditional Owners are supported to build on success in project design and delivery. Appropriate mechanisms and resources are in place to share information on what is working, how expertise is being applied and lessons learned to ensure knowledge is captured and improvements made.
3. Traditional Owner groups and Aboriginal Victorians are supported by industry partners to influence the agenda for waterway management by proactively developing communications, resolutions or project scopes and seeking industry partners.		Traditional Owners are part of the governance structure for the HWS to influence decisions regarding elements of strategy implementation. The format of this is self-determined by Traditional Owners. Traditional Owner organisations work together to influence water management planning. The Reconciliation Plans of HWS partners provide opportunities for Aboriginal Victorians in the water industry.
4. Aboriginal and Traditional Owner cultural awareness training is available to all industry professionals and is actively pursued.		Cultural awareness training is part of the induction process for new starters in Melbourne Water and there is a committed training program available for existing staff. HWS partners are actively pursuing cultural awareness training and opportunities for a peak body to set cultural awareness standards has been explored. Industry professionals who have undertaken training are able to recognise whose country they are on, are familiar

		with Traditional owner practices and are aware who they can speak to from Traditional Owner organisations.
5. Cultural competency is valued as a career skill and leads to ongoing relationships.		Cultural competency within HWS partner organisations is valued as a career skill through an awareness of the issues, experiences and practices of Aboriginal people and their communities. This awareness forms part of selection criteria for new leadership positions in Melbourne Water and encourages aboriginal people to apply and secure senior positions within the organisation. Opportunities for cross cultural learning exist and ensure constant collaboration in the water sector, as well as skills training and employment for Aboriginals Victorians.
6. Partnerships are fostered between Traditional Owner groups and research groups, and Traditional Owner groups and community groups.		Partnership research projects are in place and develop intellectual property or expertise that can be applied by Traditional Owner organisations to new situations. Traditional Ecological Knowledge to inform water science is adequately referenced and knowledge is protected based on agreements in place. Partnerships with community groups are fostered through community grant processes encouraging the inclusion Traditional Owner organisations.
7. Public events led and/or organised by Traditional Owners are regular and frequent.		Public events are determined, led, organised and hosted by the different Traditional Owner organisations to facilitate knowledge exchange and learnings for the region. The regular events are supported by the water industry and occur online or on country and are delivered to Traditional Owner communities, Water industry partners and the broader community.

3.2 Indicators and monitoring

The indicators for the cultural RPOs (Table 5) are in development and will be guided by the each of the Traditional owner organisations in the region. Further information on indicators and the approaches preferred by the different Traditional Owners will be provided in Phase 2 of the Regional MEP development.

Table 5. Summary of monitoring approach for cultural RPOs

Cultural RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
1. Traditional Owners and Aboriginal Victorians have an increased expertise in contemporary land and waterway management, waterway science and lore.	Annual progress report	TBC	Melbourne Water – Customer and Strategy, Community engagement team supporting: Wurundjeri Land and Compensation Cultural Heritage Council Bunurong Land Council Aboriginal Corporation Wathaurung Aboriginal Corporation (Wadawurrung)
2. Partnership projects build on what is working. Expertise developed in one project is applied in others.	Annual progress report	TBC	Melbourne Water – Customer and Strategy, Community engagement team supporting: Wurundjeri Land and Compensation Cultural Heritage Council Bunurong Land Council Aboriginal Corporation Wathaurung Aboriginal Corporation (Wadawurrung)
3. Traditional Owner groups and Aboriginal Victorians are supported by industry partners to influence the agenda for waterway management by proactively developing communications, resolutions or project scopes and seeking industry partners.	Annual progress report	TBC	Melbourne Water – Customer and Strategy, Community engagement team supporting: Wurundjeri Land and Compensation Cultural Heritage Council Bunurong Land Council Aboriginal Corporation Wathaurung Aboriginal Corporation (Wadawurrung)

4. Aboriginal and Traditional Owner cultural awareness training is available to all industry professionals and is actively pursued.	Annual progress report	TBC	Melbourne Water – Customer and Strategy, Community engagement team supporting: Wurundjeri Land and Compensation Cultural Heritage Council Bunurong Land Council Aboriginal Corporation Wathaurung Aboriginal Corporation (Wadawurrung)
5. Cultural competency is valued as a career skill and leads to ongoing relationships.	Annual progress report	TBC	Melbourne Water – Customer and Strategy, Community engagement team supporting: Wurundjeri Land and Compensation Cultural Heritage Council Bunurong Land Council Aboriginal Corporation Wathaurung Aboriginal Corporation (Wadawurrung)
6. Partnerships are fostered between Traditional Owner groups and research groups, and Traditional Owner groups and community groups.	Annual progress report	TBC	Melbourne Water – Customer and Strategy, Community engagement team supporting: Wurundjeri Land and Compensation Cultural Heritage Council Bunurong Land Council Aboriginal Corporation Wathaurung Aboriginal Corporation (Wadawurrung)
7. Public events led and/or organised by Traditional Owners are regular and frequent.	Annual progress report	TBC	Melbourne Water – Customer and Strategy, Community engagement team supporting: Wurundjeri Land and Compensation Cultural Heritage Council Bunurong Land Council Aboriginal Corporation Wathaurung Aboriginal Corporation (Wadawurrung)

3.3 Evaluation criteria (rubrics)

To be determined with Traditional Owner groups. This will outline more details about what needs to be considered for each of the 7 RPOs and the aspirations of the different TO Groups.

3.4 Potential lines of enquiry for evaluation

To be determined with Traditional Owner Groups.

The potential lines of enquiry for the end of strategy evaluation of performance objective should link back to the Key Evaluation Questions in the MERI particularly those relating to efficiency, legacy and appropriateness.

4 Economic

Waterways are recognised as important natural capital providing regionally significant ecosystem services, which are the benefits that humans receive from nature, as well as contributing to the health and wellbeing of the communities who visit, use and care for them.

The regional performance objectives around economic values are designed to develop environmental economic accounts and incorporate this accounting into HWS reporting (Table 6).

Table 6. Summary of Economic RPOs

RPO Group	RPO ID	RPO description	Link to condition	Link to values
Economic	8	Environmental-economic accounts are developed for the region's waterways using contemporary international standards, and are used to demonstrate the returns on catchment and waterway investment.	n/a	economic
	9	Environmental-economic accounting is incorporated into Healthy Waterways Strategy monitoring, evaluation and reporting (MER) by 2023.	n/a	economic

4.1 Economic RPOs intent

A summary of why each of the economic RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 7. Context and performance expectations for economic RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
8. Environmental-economic accounts are developed for the region's waterways using contemporary international standards, and are used to demonstrate the returns on catchment and waterway investment.	Waterways deliver economic benefits in relation to regulating services, production from extractive uses, recreation and commercial tourism, property value, urban water supply, and other ecosystem services. However, the economic contribution of waterways is often poorly understood. Environmental-economic accounts work alongside conventional accounts with the aim of tracking the health of ecosystems and their ability to produce goods and services that benefit populations. The System of Environmental Economic Accounting (SEEA) framework is an internationally accepted standard, with a set of accounting principles that works alongside conventional accounts to track the ability of ecosystems to provide goods and services that benefit society over time. SEEA links the quality and quantity of environmental assets to socio-economic benefits and is intended to support government policy, planning and	Melbourne Water, through the Healthy Waterways Strategy (HWS), has implemented a pilot of the SEEA framework in a few catchments to document and recognise the economic value of local waterways. By the end of 2020/21 the pilot accounting framework will be developed and tested. By 2021/22 the framework will be reviewed and expanded. This will incorporate a classification system for waterway ecosystem assets based on extent and condition and information about which assets have been depleted or lost, which are declining in condition and how the health of these assets affects our wellbeing as a society. The review of the pilot enables lessons to be incorporated for the roll out of the SEEA framework by Melbourne Water in 2023 as part of RPO 9.

	investment decisions affecting the environment. A number of government agencies use the SEEA framework to track the health of environmental assets and their connection to wider economic impacts and the purpose of this RPO is to apply the SEEA framework to the region's waterways.	
9. Environmental-economic accounting is incorporated into Healthy Waterways Strategy monitoring, evaluation and reporting (MER) by 2023.	It is important that the outcomes from the pilot of the environmental-economic SEEA framework (as part of RPO 8) are incorporated as part of the MERI process to learn lessons and identify improvements. This will enable the SEEA framework to be applied to waterways in the region.	Melbourne Water is able to use the SEEA framework to track the relationship between waterway management and outcomes (return on investment) as part of the Healthy Waterways Strategy over time. The SEEA framework applied to the region's waterways supports government policy, planning and investment decisions affecting the environment. The SEEA framework has strengthened the ability of local government, business, not-for-profit and community stakeholders to recognise the benefits of protecting and investing in the environment.

4.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 8 and will be discussed with HWS delivery partners in Phase 2.

Table 8. Monitoring indicators and methods for economic RPOs

Economic RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
8. Environmental-economic accounts are developed for the region's waterways using contemporary international standards, and are used to demonstrate the returns on catchment and waterway investment.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Water services Planning team Other delivery partners e.g. DELWP
9. Environmental-economic accounting is incorporated into Healthy Waterways Strategy monitoring, evaluation and reporting (MER) by 2023.	Annual progress report	To be determined in Phase 2	Melbourne Water – Water services Planning team Other delivery partners e.g. DELWP

4.3 Evaluation criteria (Rubrics)

To be determined in Phase 2.

4.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

5 Adaptive Management

Adaptive Management regional performance objectives address a couple of themes including development and implementation of a monitoring, evaluation, reporting and improvement plan, understanding and managing risks of climate change and investing in research and knowledge gaps (Table 9).

At the core of adaptive management is the ability to learn from previous experience, update management approaches to reflect the knowledge gained and changes in our environment that occur during implementation, and manage uncertainty such as increase in temperature, changed rainfall patterns or sea level rise.

In alignment with the Victorian Waterway Management Program, the Healthy Waterway Strategy supports research that: Provides essential knowledge to address critical short-term and/or strategic long-term knowledge gaps. The Strategy lists the initial key research areas identified. These research areas will evolve during the life of the Strategy. The resulting research findings will be incorporated into policy and management. Research will focus on knowledge gaps or low confidence relationships between performance objectives, waterway conditions and key values.

Table 9. Summary of adaptive management RPOs

RPO Group	RPO ID	RPO description	Link to condition	Link to values
Adaptive management	10	An adaptive pathways approach is adopted to understand and manage the risks of climate change on waterways.	All conditions	All values
	11	Understanding of groundwater dependent ecosystems is improved and opportunities to maintain or improve these continue to be investigated.	Water regime, wetland habitat form	Frogs, fish, birds, vegetation macroinvertebrates
	18	Critical waterway health assets including stormwater treatment systems, fishways and erosion control structures, are maintained for their designed purpose or the same outcomes are delivered by alternative means.	Physical form, stormwater, wetland habitat form, instream connectivity, access	All values
	23	The potential impacts of emerging contaminants of concern such as microplastics, pesticides and pharmaceuticals, and toxic chemicals are better understood and mechanisms to respond collaboratively developed.	Water quality, litter	Birds, fish, platypus, frogs, amenity
	42	Wetland condition information and prioritisation with a focus on vulnerable wetlands is understood and	vegetation condition wetland habitat form	Birds, frogs, macroinvertebrates, vegetation, amenity

		informs collaborative planning.	Wetland buffer condition water regime wetland water quality	
	45	Research partnerships with universities and other research institutions are in place to address the key research areas and build our knowledge and capacity to efficiently and effectively achieve the Healthy Waterways Strategy performance objectives and targets.	n/a	All values

5.1 Adaptive management RPOs intent

A summary of why each of the adaptive management RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 10. Context and performance expectations for adaptive management RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
10. An adaptive pathways approach is adopted to understand and manage the risks of climate change on waterways.	Further consideration is needed to understand the predicted impacts of climate change on the resilience of environmental values into the future and determine possible courses of action. Adaptive pathways planning is an approach that shows how with future uncertainty, options can be implemented over time.	By 2028, strategies (or pathways) have been developed that are robust and flexible against multiple plausible futures or scenarios. Ongoing research, monitoring and adaptive pathways planning enables decision making for today to prepare for future conditions. The Habitat Suitability Model is one such tool for adaptive management and throughout the HWS period, it is updated regularly with data from relevant research projects and applied as part of the MERI evaluation process.
18. Critical waterway health assets including stormwater treatment systems, fishways and erosion control structures, are maintained for their designed purpose or the same outcomes are delivered by alternative means.	Maintenance of existing waterway health assets ensures that they continue to perform their designed functions and provide benefits for waterway condition and values. A comprehensive regional program to manage and maintain assets such as stormwater treatment systems, fishways and erosion control structures is essential for the continued health of our waterways. Melbourne Water has responsibility for many of these types of assets along with	An asset management program is in place for critical waterway health assets. There is evidence that these assets are routinely being maintained, and renewed as required; and that their condition and performance in supporting waterway condition and values is understood. Physical habitat outcomes in waterways will have improved due to implementation and continued maintenance of erosion control measures and fishways. Critical bank protection structures will have been identified, inspected and where appropriate, management agreements for these structured will be in place with the relevant asset

	Local Government, Parks Victoria and Water retailers in certain locations. There is a significant opportunity to investigate the retrofit of some assets such as existing stormwater treatment wetlands to contribute towards the Strategy's stormwater condition targets, by modifying asset function with additional works that enable stormwater harvesting.	owners. Examples exist where alternative options for softer bank protection structures have been appropriately implemented to reduce the reliance on hard engineered structures. The opportunity to retrofit some existing constructed wetlands has been investigated and implemented to contribute towards the Strategy's infiltration and harvesting targets, by modifying the function of those assets to enable stormwater harvesting.
23. The potential impacts of emerging contaminants of concern such as microplastics, pesticides and pharmaceuticals, and toxic chemicals are better understood and mechanisms to respond collaboratively developed.	Emerging contaminants of concern is a knowledge gap that agencies and the community identified during the development of the HWS. Horizon scanning to identify which contaminants globally are becoming issues is required to understand the potential implications for local waterways and to proactively manage the potential risks to values.	A review of emerging contaminants of concern is undertaken each year by research institutions. The research will identify what threats the contaminants pose for key environmental values and measure for these contaminants to identify potential hotpot areas. The research will rank the contaminants in terms of priority and the knowledge developed will be used by agencies and communities to collaboratively and proactively manage the risks potentially posed by the highest ranked contaminants.
42. Wetland condition information and prioritisation with a focus on vulnerable wetlands is understood and informs collaborative planning.	The 2018 HWS is the first regional strategy for the Port Philip and Westernport region to include wetlands in any detail. Current knowledge about the condition of wetlands across the region is limited as there has been no established monitoring program for the region's wetland conditions or values (other than Ramsar wetlands). There is also no single agency with clear designated oversight for all wetlands and as a consequence, vulnerable wetlands are at risk of being lost through urban development and agricultural practices.	A regional prioritisation process for wetlands is completed based on ecological and social values. This information has been applied to update the scope of wetlands included in condition monitoring. Work has been progressed with Traditional Owners to address the knowledge gap of identifying cultural values of the region's wetlands. The modified version of the Index of Wetland Condition (IWC) is used to monitor and track the wetland condition of priority wetlands. Evaluation of the monitoring results is shared with relevant government agencies and community groups to

	Regional wetland management and monitoring needs to be a collaborative exercise involving Department of Environment, Land, Water and Planning, Parks Victoria, Melbourne Water, Councils, community groups, Representative Aboriginal Parties, developers and private land owners.	identify vulnerable wetlands and to assist with the management and protection of priority wetlands.
45. Research partnerships with universities and other research institutions are in place to address the key research areas and build our knowledge and capacity to efficiently and effectively achieve the Healthy Waterways Strategy performance objectives and targets.	The development of the HWS and the MERI framework highlighted areas where critical knowledge gaps exist. The HWS supports research that: • Provides essential knowledge to address critical short-term and/or strategic long-term knowledge gaps. • Targets knowledge gaps or low confidence in the relationships between performance objectives, waterway conditions and key values. It is vital that research is targeted to better understanding the effectiveness of management activities with significant Victorian Government investment (for example, streamside revegetation). It is also acknowledged that the State of the Bays and State of the Yarra reporting will provide benchmark data that may identify relevant waterways knowledge gaps, to which the Healthy Waterways Strategy will then be able to respond.	Melbourne Water and HWS partners address strategy knowledge gaps by investment both in large-scale research collaborations that focus on national priorities and industry direction (e.g. cooperative research centres [CRCs] and Australian Research Council linkage projects), as well as investment in complementary collaborations that are more responsive to local research needs (i.e. research partnerships with universities). For each of these delivery pathways, governance structures (e.g. Research Management Committees and project teams) are in place to oversee project development, delivery and knowledge sharing and adoption. Ongoing evaluation of the research program is undertaken to ensure that it effectively meets its objectives to support HWS delivery. A review of the impact and effectiveness of Melbourne Water research partnerships and research projects is conducted alongside identification of remaining knowledge gaps at end of strategy to support the development of the next HWS.

5.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 11 and will be discussed with HWS delivery partners in Phase 2.

Table 11. Monitoring indicators and methods for adaptive management RPOs

Adaptive management RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
10. An adaptive pathways approach is adopted to understand and manage the risks of climate change on waterways.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water - Strategic Land and Waterway Planning team Other delivery partners e.g. DELWP
18. Critical waterway health assets including stormwater treatment systems, fishways and erosion control structures, are maintained for their designed purpose or the same outcomes are delivered by alternative means.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team
23. The potential impacts of emerging contaminants of concern such as microplastics, pesticides and pharmaceuticals, and toxic chemicals are better understood and mechanisms to respond collaboratively developed.	Annual progress report	To be determined in Phase 2	Melbourne Water – Applied Research Other delivery partners e.g. EPA, DELWP
42. Wetland condition information and prioritisation with a focus on vulnerable wetlands is understood and informs collaborative planning.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management Other delivery partners e.g. DELWP

Adaptive management RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
45. Research partnerships with universities and other research institutions are in place to address the key research areas and build our knowledge and capacity to efficiently and effectively achieve the Healthy Waterways Strategy performance objectives and targets.	Annual progress report	To be determined in Phase 2	Melbourne Water – Applied Research Other delivery partners e.g. DELWP

5.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

5.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

6 Water for Environment

Water for the environment is water managed to improve or maintain the health of rivers and wetlands – including the plants and animals that depend on them. Cultural values and liveability values are of high importance supporting shared benefits.

The environmental water reserve was established by the Victorian Government to ensure that water is available to protect the environmental values of waterways. Future stream flows are now predicted to be lower than previously modelled, and it is clear that additional water will be needed to meet environmental objectives for the region's waterways. It is also acknowledged that there will be additional and ongoing demand for rural and urban water supply from the catchments, including water for domestic, stock and agricultural uses.

The RPO focuses on the requirement, especially in the face of climate change and urbanisation that recovery options for the regulated systems continue to be investigated and in the unregulated systems, water for the environment continues to be maintained or improved (Table 12).

Table 12. Summary of water for environment RPOs

RPO Group	RPO ID	RPO description	Link to waterway condition	Link to waterway values
Water for environment	11	Understanding of groundwater dependent ecosystems is improved and opportunities to maintain or improve these continue to be investigated.	Water regime, vegetation condition	Frogs, birds, fish macroinvertebrates
	12	Water for the Environment continues to be managed and delivered to the region's rivers and wetlands and recovery options continue to be investigated.	Water / flow regime	Fish, frogs, birds, macroinvertebrates

6.1 Water for environment RPOs intent

A summary of why the water for environment RPO was developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of this RPO.

Table 13. Context and performance expectations for water for environment RPO

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
11. Understanding of groundwater dependent ecosystems is improved and opportunities to maintain or improve these continue to be investigated.	Water flow and natural resource management across the region must also consider the dependency of some high value and high risk ecosystems on infiltration and groundwater. The ecosystems that rely on groundwater to meet all or part of the water requirement on a permanent or intermittent basis are known as 'groundwater dependent ecosystems (GDEs) and can be a wetland or a creek. Southern Rural Water are the resource manager for groundwater. Melbourne Water, as the waterway manager, has led the GDE program since 2013 to identify, understand and manage GDEs. The program has prioritised key GDEs in the region for management to ensure the enhancement or protection of these high value and high risk ecosystems. It is important that the outcomes from the program are embedded into adaptive management requirements so that GDEs have greater resilience to withstand drier	By 2028, Melbourne Water and HWS delivery partners will be proactively managing and enhancing priority GDEs. This will be achieved through: - Assessments of climate change impacts on recharge rates of groundwater and interactions with surface water - Assessments of urbanisation impacts on recharge rates of groundwater and interactions with surface water - Targeted refinement of the monitoring program to understand the resilience of groundwater dependent ecosystems and their water sources. - Development of Environmental Watering Action Plans to identify management actions for priority GDEs. - Knowledge sharing and incorporation of monitoring data in large infrastructure projects in the vicinity of priority GDEs.

	periods in the face of climate change and urbanisation.	
12. Water for the Environment continues to be managed and delivered to the region's rivers and wetlands and recovery options continue to be investigated.	The effects of climate change are already being experienced across Victoria, including higher average temperatures and reduced rainfall. This has seen the streamflows in our waterways decline as a result. To continue to meet the environmental objectives and maintain healthy waterways, more water for the environment will need to be set aside. It is also acknowledged that there will be additional and ongoing demand for rural and urban water supply from the catchments, including water for domestic, stock and agricultural uses. Over the long term, the shortfall due to climate change is estimated at between 36–70 billion litres (36 GL–70 GL) per year.	The Strategy target of an increase of the environmental water reserve by 23 billion litres (23 GL) per year have been achieved by 2028, with any water recovery for the environment considered through the Victorian Sustainable Water Strategies (SWSs), markets and use of alternative water. Contribution from each catchment to this total is identified as performance objectives in the Co-Designed Catchment Programs. Opportunities have been investigated through the LTWRA and CRSWS process to identify opportunities to recover unallocated water, purchase irrigation entitlements re-balance entitlements and increase entitlements through substitution and or re-purposing alternative water (stormwater or recycled water) for the environment. Melbourne Water has led a complimentary water recovery program for alternative water designed to identify and develop 10 opportunities to conceptual design stage by 2022 to test the potential to recover alternative waters.

6.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 14Table 8 and will be discussed with HWS delivery partners in Phase 2.

Table 14. Monitoring indicators and methods for water for environment RPO

Water for environment RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
11. Understanding of groundwater dependent ecosystems is improved and opportunities to maintain or improve these continue to be investigated.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Environmental Water resources Other delivery partners e.g. Southern Rural Water, DELWP
12. Water for the Environment continues to be managed and delivered to the region's rivers and wetlands and recovery options continue to be investigated.	Annual progress report	To be determined in Phase 2	Melbourne Water – Environmental Water resources Other delivery partners e.g. Southern Rural Water, DELWP

6.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

6.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

7 Stormwater

Stormwater performance objectives aim to ensure stormwater is adequately managed to protect key values and the bays. Performance objectives are set regionally, as regional performance objectives (RPOs), and at the sub- catchment, as sub- catchment performance objectives (SCPOs).

The RPOs are focused on foundational activities required to drive a shift in stormwater management through capacity building, guidelines and policy responses for protecting and managing the impacts of stormwater on waterways (Table 15).

Table 15. Summary of stormwater RPOs

RPO Group	RPO ID	RPO description	Link to waterway condition	Link to waterway values
Stormwater	13	Industry capacity for whole of water cycle and stormwater management is increased to enable collaboration, improved access to information and knowledge, and a skilful and capable industry with strong established networks.	Participation, stormwater	Community connection
	14	Standards, tools and guidelines are in place and implemented to enable re-use and infiltration of excess stormwater, and protect and/or restore urban waterways.	Stormwater	All values

7.1 Stormwater RPOs intent

A summary of why each of the stormwater RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 16. Context and performance expectations for stormwater RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
13. Industry capacity for whole of water cycle and stormwater management is increased to enable collaboration, improved access to information and knowledge, and a skilful and capable industry with strong established networks.	Integrated water management (IWM) is a body of practice that considers the movement of water across and through the landscape, its uses and disposal, its sources and its destinations. This is referred to as a 'whole of water cycle' approach. IWM requires a collaborative approach to planning, bringing together organisations that influence all elements of the water cycle, from wastewater management, alternative and potable water supply, stormwater management and water treatment. Capacity building that strengthens collaborations is essential to support adoption and implementation of the stormwater management practices (including planning and policy responses) needed to achieve the outcomes set in this Strategy. In 2018, the water industry, supported by the Victorian Government, established Integrated Water Management Forums to identify and prioritise areas that would most benefit from collaborative place-based	To be determined in consultation with DELWP and Clearwater.

	planning. This initiative continues to be supplemented by Clearwater which is a capacity building program working together with the water industry to transform the way water is managed, using IWM approaches.	
14. Standards, tools and guidelines are in place and implemented to enable re-use and infiltration of excess stormwater, and protect and/or restore urban waterways.	Planning and policy responses are a key mechanism for protecting and managing the impacts of stormwater on waterways. Several planning approaches will be necessary to meet this Strategy's objectives for widespread implementation of stormwater management and appropriate urban development including tools and guidance to support future urban development that minimises impacts on waterway health and enhances amenity values.	TBC but will include: Modelling guidelines for MUSIC and standard drawings for infiltration that are simple to use are available and there is evidence that they are applied by agencies, local government and developers. EPA have developed new guidance that specifies stormwater volume standards.

7.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 17 and will be discussed with HWS delivery partners in Phase 2.

Table 17. Monitoring indicators and methods for stormwater RPOs

Stormwater RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
13. Industry capacity for whole of water cycle and stormwater management is increased to enable collaboration, improved access to information and knowledge, and a skilful and capable industry with strong established networks.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Water Services Planning Other delivery partners e.g. DELWP, Clearwater
14. Standards, tools and guidelines are in place and implemented to enable re-use and infiltration of excess stormwater, and protect and/or restore urban waterways.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment and Water Quality Other delivery partners e.g. EPA, DELWP

7.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

7.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

8 Water quality

Water quality RPOs aim to ensure water quality is adequately managed to protect key waterway values and the bays. In addition to benefiting ecological values appropriate water quality is critical to minimise human health risks associated with recreational activities in and on the water.

The water quality RPOs include the construction phase of urban development (RPO-17), developing risk based programs to address pollution hot spots (RPO-24) and tools and guidance for the management of agricultural land (RPO-25) (Table 18). Managing sediments and pollutant runoff during the construction phase of urban development has been highlighted in the strategy at both a regional level and in key sub-catchments – particularly those in the Westernport catchments due to the impacts on sea grass in the bay.

Table 18. Summary of water quality RPOs

RPO Group	RPO ID	RPO description	Link to condition	Link to values
Water quality	17	Water quality in waterways and bays is improved by reducing inputs of sediment and other pollutants from urban construction and development.	Water quality, physical form	All values
	24	Risk-based programs are in place to mitigate sources of urban pollution (licenced and unlicensed discharges) to protect bays and waterways.	Water quality, stormwater	All values
	25	Programs, standards, tools and guidelines are in place to manage nutrients, sediments and other pollutants from rural land in priority areas.	Water quality	All values

8.1 Water quality RPOs intent

A summary of why each of the water quality RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 19. Context and performance expectations for water quality RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
17. Water quality in waterways and bays is improved by reducing inputs of sediment and other pollutants from urban construction and development.	Early intervention to limit sediment from construction and development entering the waterways and bays is critical to prevent harm these ecosystems. While the sub-catchment performance objectives identify areas where intervention is required, the regional performance objective is focused on research and best practice. This RPO also links to the targets in the Port Phillip Bay Environmental Management Plan (2017) of maintaining loads of total nitrogen (TN) and total suspended solids (TSS) at their current levels. It also links to the Western Port sediment load target of the SEPP (Waters).	Research has identified the quantum of sediment Research has identified the quantum of sediment that can be delivered from construction sites in Westernport Bay catchment and the rapidly developing western region and recommended appropriate management interventions. This has been used to update best industry practice to communicate the best combination of approaches that can be implemented to reduce sediment input. Analysis of pollutant and nutrient loads monitoring data is frequently conducted to assess progress towards meeting the total nitrogen (TN) and total suspended solids (TSS) targets in the Port Phillip Bay Environmental Management Plan (2017). A final evaluation is conducted by DELWP in 2027 to determine if the targets have been met.
24. Risk-based programs are in place to mitigate sources of urban pollution (licenced and unlicensed discharges) to protect bays and waterways.	There are many potential sources of urban pollution from licensed and unlicensed discharges and several agencies have used different approaches over the years to mitigate these sources. A new alternative approach for managing pollution hotpots was proposed during the co-design process	OPLEs will be in place in key urban councils in the region that have known waterway pollution hotspots and will be actively responding to priorities raised by council and residents. Melbourne Water will facilitate with funding and on-ground support where required.

	of developing the Heathy Waterways Strategy and is based on EPA's new direction of focusing on preventing waste and pollution impacts, rather than managing those impacts after they have occurred. The approach involves EPA's Officers for the Protection of the Local Environment (OPLEs) being based in local councils to undertake environmental monitoring and assessment. Their role is to help industry, business and community find, prevent and resolve environmental issues including urban pollution of waterways. This regional performance objective is designed to monitor the outcome of this approach alongside other approaches.	Impacts from sewerage discharges will be reduced through a greater emphasis on risk-based discharge licensing, and through improved sewer system resilience. Research into urban water pollution patterns is completed to improve the detection of pollution and identify and manage major pollution sources.
25. Programs, standards, tools and guidelines are in place to manage nutrients, sediments and other pollutants from rural land in priority areas.	Treating the problems caused by excessive nutrients, sediments and contaminants entering the regions creeks and rivers is costly. A more effective strategy involves encouraging responsible land management practices to reduce the amount of nutrients, sediments and other contaminants leaving properties in runoff. Melbourne Water, the Port Phillip and Westernport Catchment Management Authority, Western Biosphere Reserve and Landcare groups have a number of guidelines and programs in place to manage nutrients sediments and other pollutants from rural land. The purpose of this RPO is to ensure these programs continue and improve over time.	Programs to support landholders to manage nutrients and sediments from rural land have been reviewed and evaluated during the strategy period and improvements to the programs are evident. The number of properties enrolled in programs has increased compared to the baseline of 2017. New tools and updated guidelines have been made available to landholders and these have demonstrated to be used by landholders.

8.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 20 and will be discussed with HWS delivery partners in Phase 2.

Table 20. Monitoring indicators and methods for water quality RPOs

Water quality RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
17. Water quality in waterways and bays is improved by reducing inputs of sediment and other pollutants from urban construction and development.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Development Services team Other delivery partners e.g. EPA, Local government
24. Risk-based programs are in place to mitigate sources of urban pollution (licenced and unlicensed discharges) to protect bays and waterways.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment and Water Quality team e.g. EPA, DELWP, Local government
25. Programs, standards, tools and guidelines are in place to manage nutrients, sediments and other pollutants from rural land in priority areas.	Annual progress report	To be determined in Phase 2	Melbourne Water – Regional services team e.g. PPWCMA, DELWP, Local government

8.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

8.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

9 Litter

Currently, regional litter management is a combination of prevention and clean-up activities. Councils, Melbourne Water and Parks Victoria are the main agencies with responsibility for removing litter from waterways and beaches. There is also a significant contribution from local community groups with environmental and amenity interests.

Historically the focus has been on capturing litter (for example, through gross pollutant traps, street sweeping, bins in public places, beach sweeping). Emphasis is shifting, and government agencies and councils, with the support of some non-government agencies, are developing and implementing litter prevention and education strategies to reduce the incidence of littering and illegal dumping.

The RPOs (Table 21) highlight the reduction of litter and illegal dumping as the key focus areas for improving waterway values. In particular, methods for assessing litter volumes and sources are needed in order to develop more strategic litter management programs including community awareness and knowledge, infrastructure and enforcement

Table 21. Summary of litter RPOs

RPO Group	RPO ID	RPO description	Link to condition	Link to values
Litter	26	Methods are in place to assess volume and source of litter to inform and promote litter reduction programs.	Litter	Amenity
	27	Incidence of littering and illegal dumping is reduced through raised community awareness and knowledge, infrastructure and enforcement.	Litter, participation	Amenity

9.1 Litter RPOs intent

A summary of why each of the litter RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 22. Context and performance expectations for litter RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
26. Methods are in place to assess volume and source of litter to inform and promote litter reduction programs.	Litter has negative impacts on waterway values and evidence is growing on the ecological and health impacts of microplastic litter in particular. Without strong management actions, litter loads to waterways and the bays are projected to increase significantly as the urban population grows. There are different methods for assessing the source and volume of litter however, a consistent and robust method is required to quantify the scale of litter in the region's waterways. This RPO also supports the action in the Port Phillip Environmental Management Plan (2017) to establish a baseline estimate of the volume of litter entering Port Phillip Bay.	A consistent framework and litter monitoring method is in place to measure and quantify litter in waterways. The framework is used by Melbourne Water to collect litter data and is aligned with the Litterwatch Victoria online database. Waterway litter data supplied by Melbourne Water is available to view on the LitterWatch mapping portal. Litter data is collected by different HWS partners as part of a collaborative whole of catchment approach to understand, prioritise and co-ordinate litter management in the region. Standardised litter data is combined across agencies to develop and prioritise management actions that reduce litter. Melbourne Water has adopted a level of service for litter management for the different catchments enabling a prioritised program that meets the developed service and technical objectives at the right location, efficiently. Internal roles and responsibilities have been clarified and processes are in place to co-ordinate efforts with HWS partners.

27. Incidence of littering and illegal dumping is reduced through raised community awareness and knowledge, infrastructure and enforcement.	Historically the focus has been on capturing litter (for example, through gross pollutant traps, street sweeping, bins in public places, beach sweeping). Emphasis is now shifting, and government agencies and councils, with the support of some non-government agencies, are developing and implementing litter prevention and education strategies to reduce the incidence of littering and illegal dumping. This is based on the model that litter prevention and management close to the source is key to minimising water pollution and is a more cost effective approach than focusing on more visible solutions such as large end of system litter traps or clean-up. This RPO also links to the action in the Port Phillip Environmental Management Plan (2017) to support capability and capacity building programs that target litter prevention, including reduction of microplastics.	This RPO links to RPO 26 which will help to provide a baseline to compare against in 2028. The comparison will demonstrate if the incidence of litter and illegal dumping in waterways is reduced in 2028 compared to 2018, factoring in an increased population during this period. Community awareness and knowledge has increased compared to 2018 with an increase in community groups and school children helping to clean up waterways. Enforcement of litter offences is publicised through reporting online the number of infringement notices and litter campaigns have highlighted the legal consequences of littering. A container deposit scheme is in place, reducing the amount of littered bottle and cans.

9.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 23 and will be discussed with HWS delivery partners in Phase 2.

Table 23. Monitoring indicators and methods for litter RPOs

Litter RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
26. Methods are in place to assess volume and source of litter to inform and promote litter reduction programs.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. DELWP, Local government, Community
27. Incidence of littering and illegal dumping is reduced through raised community awareness and knowledge, infrastructure and enforcement.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. EPA, DELWP, Local government, Community

9.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

9.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

10 Vegetation

Vegetation plays a crucial role in enhancing drought refuge habitats by providing shade and other key ecological functions. Additional benefits associated with revegetation include cooler urban environments, better resilience and reduced impacts of climate change.

The Healthy Waterways Strategy has set significant vegetation targets for both public and private land that is managed by a diverse array of stakeholders. Collaboration will be critical to achieve the outcomes identified for maintaining and extending streamside vegetation in the Co-Designed Catchment Programs. A particular challenge is accessing, establishing or protecting vegetation on private land in areas marked for urban growth. Ephemeral wetlands are particularly at risk in these areas, despite their vegetation communities being protected through native vegetation planning controls.

The RPOS are designed to support maintaining and extending vegetation in priority areas for all assets – rivers, wetlands and estuaries and seek to ensure appropriate programs, tools and guidelines are in place to tackle complex problems such as climate change impacts (Table 24). Seasonal Herbaceous Wetland vegetation communities are the focus on one RPO due to the need to manage threats to very significant and rare vegetation communities.

Table 24. Summary of vegetation RPOs

RPO Group	RPO ID	RPO description	Link to waterway condition	Link to waterway values
Vegetation	28	Seasonal Herbaceous Wetland vegetation communities are identified and a management program is in place to protect them on public and private land.	Wetland vegetation condition, wetland habitat form, water regime	Vegetation, frogs, birds
	29	Programs, standards, tools and guidelines are in place to protect wetland vegetation communities from urban and rural threats, including adequate planning controls.	Wetland vegetation condition, wetland habitat form, water regime, wetland buffer condition	Vegetation, frogs, birds, amenity
	30	Climate change resilient revegetation management practices are understood and implemented by selecting plant species, provenances and vegetation communities that are suited to projected future climatic conditions.	Vegetation extent & quality	Vegetation

10.1 Vegetation RPOs intent

A summary of why each of the vegetation RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 25. Context and performance expectations for vegetation RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
28. Seasonal Herbaceous Wetland vegetation communities are identified and a management program is in place to protect them on public and private land.	Seasonal Herbaceous Wetlands (SHW) are isolated freshwater wetlands that are intermittently filled by rainfall. They are usually inundated in the cooler months (winter – spring), and generally dry out by late summer, so surface water is not permanently present. They often occur on fertile soil in agricultural landscapes. Being dry for part of each year means they can seem to disappear from the landscape and as a result many have been cropped or drained during dry periods. SHW are listed as critically endangered under the federal Environmental Protection and Biodiversity Conservation Act (EPBC Act).	By 2028, the location and extent of Seasonal Herbaceous wetland vegetation communities in the region is mapped and a management plan to protect them on public land is in place. Seasonal Herbaceous wetland vegetation communities are actively managed on private land in urban growth areas.
29. Programs, standards, tools and guidelines are in place to protect wetland vegetation communities from urban and rural threats, including adequate planning controls.	Wetlands have been singled out in the Healthy Waterways Strategy for the first time as a natural asset that needs specific programs, tools and guidelines to protect wetland vegetation. This is because at least two thirds of Victoria's wetlands have been drained or degraded since European occupation. This loss is practically irreversible because sites	The Wetlands MEP has been developed and sets the standards and guidance for monitoring and evaluating the values and condition of wetlands. The monitoring and evaluation results are reporting publicly and are available online. All priority wetlands in the region have been identified, mapped and information shared with HWS partners. The surface water catchment areas of priority wetlands are mapped and this

	have been permanently converted to cropland, pasture, dams or have undergone substantial modification of their drainage and ecological characteristics due to urban development. The majority of wetlands are not protected by planning controls or overlays and there is an urgent need to protect wetlands from future threats.	information is used to assess potential impact by urban development. Tools and guidelines are in place to aid the protection of wetlands. Planning controls have been introduced for priority wetlands at risk by urban or rural threats.
30. Climate change resilient revegetation management practices are understood and implemented by selecting plant species, provenances and vegetation communities that are suited to projected future climatic conditions.	Recent findings from research on the future resilience of revegetation have indicated that the current best practice approach of only sourcing local provenance species is unlikely to be viable as the climate becomes warmer. This suggests that some species currently used for revegetation may not be suitable under future climatic conditions in 2070. Research is required to understand which local provenance species have the most resilience to changing climatic conditions and which species may need to be introduced from other regions to ensure future revegetation is successful. This needs to be supplemented with agencies changing their seed and plant species sourcing approach based on research outcomes.	Research findings into climate change resilient revegetation management practices have been incorporated into the business as usual operations of revegetation in Melbourne Water and some HWS partners. An adaptive management approach has been applied to revegetation practices (e.g. setting up seed production areas on Melbourne Water land from species provenances from warmer regions) based on changes to the projected future climatic conditions. The distribution of additional vegetation communities and ecologically important weeds has also been researched.

10.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 26Table 8 and will be discussed with HWS delivery partners in Phase 2.

Table 26. Monitoring indicators and methods for vegetation RPOs

Vegetation RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
28. Seasonal Herbaceous Wetland vegetation communities are identified and a management program is in place to protect them on public and private land.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Catchment Asset Management team Other delivery partners: e.g. PPWCMA, Parks Vic, DELWP
29. Programs, standards, tools and guidelines are in place to protect wetland vegetation communities from urban and rural threats, including adequate planning controls.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team Other delivery partners: e.g. DELWP, Local Government
30. Climate change resilient revegetation management practices are understood and implemented by selecting plant species, provenances and vegetation communities that are suited to projected future climatic conditions.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team Other delivery partners: e.g. DELWP, Parks Vic

10.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

10.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

11 Pests

Pest animals affect social, environmental and safe drinking water values. Foxes, feral dogs and cats directly affect biodiversity by preying on or competing with birds, reptiles and mammals, including platypus. Increases in exotic weeds impact on the healthy functioning of waterways, such as changing stream bank structure and water flow, changing habitats of native animals, outcompeting native vegetation, and altering the chemical composition of the water or soil. Grazing and browsing animals such as rabbits and deer reduce groundcover. In addition, wild deer and pigs can pollute drinking water supplies through carrying human-infectious organisms.

With higher water temperature caused by climate change, increased nutrients from stormwater and higher boat traffic from a growing population, the risk of aquatic and marine pest introductions and spread in estuaries is increasing.

The pest plants and animal regional performance objective (RPO) (Table 27) is about using a risk based approach. Some high risk areas have been identified and captured in sub-catchment performance objectives (SCPOs).

Table 27. Summary of pests RPO

RPO Group	RPO ID	RPO description	Link to condition	Link to values
Pests	31	A risk-based approach is adopted to prevent, eradicate and contain pest plants and animals (including deer) and protect waterway assets.	Vegetation extent & quality, instream connectivity,	Vegetation, amenity

11.1 Pest RPO intent

A summary of why the pest RPO was developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 28. Context and performance expectations for the pest RPO

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
31. A risk-based approach is adopted to prevent, eradicate and contain pest plants and animals (including deer) and protect waterway assets.	Government intervention is warranted to address high-risk species that threaten significant environmental, social, cultural and economic values of waterways, where benefit is expected to exceed cost. Many of these pests are present on numerous waterways and an ecological risk based approach is required to prioritise where native flora and fauna are at tipping points where damage is irreversible. Deer, in particular are a pest that are growing in numbers in the region and the community has raised concern about the future management of them to limit the damage to waterways.	By 2028, a risk-based approach to the prevention, eradication, containment and value protection has been developed and applied for the management of pest plants and animals in waterways and across catchments. The risk-based approach has considered both current and known potential future risks to waterway conditions that are posed by pest plants and animals (including noxious weeds, deer, rabbits, carp and eastern gambusia). Evidence of programs that prevent introduction or eradicate newly establishing pest plants or animals is available and shared with community and HWS partners. Programs to reduce the impact of established invasive species are undertaken collaboratively by HWS partners and the community.

11.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 29 and will be discussed with HWS delivery partners in Phase 2.

Table 29. Monitoring indicators and methods for the pests RPO

Pests RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
31. A risk-based approach is adopted to prevent, eradicate and contain pest plants and animals (including deer) and protect waterway assets.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. Parks Victoria, DELWP, Local government, DJTR

11.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

11.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

12 Habitat

The habitat RPO is focused on programs to protect and enhance sites of biodiversity significance and is explicitly linked to Melbourne Water's Sites of Biodiversity Significance (SoBS) program (Table 30). The SoBS program has been operating for 21 years and covers 44 sites with an approximate area of 15,667 ha. The program has been a key element of Melbourne Water's biodiversity conservation and management, and been critical in demonstrating best practice compliance with environmental legislation.

The SoBS program delivers biodiversity management actions informed by site appropriate management plans and monitoring activities. Monitoring activities are intended to refine on-ground actions, report on obligations and can communicate the effectiveness of actions across teams responsible for SoBS management.

Table 30. Summary of habitat RPO

RPO Group	RPO ID	RPO description	Link to condition	Link to values
Habitat	32	Programs are in place to protect and enhance sites of biodiversity significance associated with the region's waterways, such as through Melbourne Water's Sites of Biodiversity Significance Strategy.	Vegetation condition, physical form/wetland habitat form, water regime, estuarine connectivity	Birds, fish, frogs, macroinvertebrates, platypus, vegetation

12.1 Habitat RPOs intent

A summary of why the habitat RPO was developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of this RPO.

Table 31. Context and performance expectations for the habitat RPO

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
32. Programs are in place to protect and enhance sites of biodiversity significance associated with the region's waterways, such as through Melbourne Water's Sites of Biodiversity Significance Strategy.	Melbourne Water's Sites of Biodiversity Significance (SoBS) program has been operating for 21 years. The program current covers 44 sites and has the goal of having effective identification, management and monitoring of significant biodiversity values - especially threatened species / communities - where these occur on Melbourne Water owned or managed properties. Several of these sites are strategically located adjacent to larger reserves managed by HWS partners.	The Sites of Biodiversity Significance (SoBs) program has expanded to include new sites that meet the selection criterion as outlined in a SoBS program plan. All listed sites have been reviewed by 2023 to ensure they still meet the eligibility criteria. All SoBS have a site management plan that is less than seven years old and all significant populations of threatened species/communities of flora and fauna have been surveyed within 5 years. Monitoring of SoBS aligns with methods and process outlined in the Wetland and Estuary Monitoring Evaluation Plans. The potential long term trends that could impact on biodiversity values in SoBS has been explored and proactive management action taken to manage future impacts.

12.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 32 and will be discussed with HWS delivery partners in Phase 2.

Table 32. Monitoring indicators and methods for the habitat RPO

Habitat RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
32. Programs are in place to protect and enhance sites of biodiversity significance associated with the region's waterways, such as through Melbourne Water's Sites of Biodiversity Significance Strategy.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. DELWP

12.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

12.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

13 Community places

This group of regional performance objectives is centered around social values and community place making (Table 33). They include investigating options to transform modified waterways by creating more naturalistic, community-loved spaces. Actions to create cooler, greener and more liveable urban environments are needed to adapt to climate change. A better understanding of the social values of wetlands is also a focus at a regional scale and links to several performance objectives at the sub-catchment scale.

Table 33. Summary of community places RPOs

RPO Group	RPO ID	RPO description	Link to waterway condition	Link to waterway values
Community places	19	Options to transform modified waterways by creating more natural, community-loved spaces are identified and implemented.	Access, participation	Amenity, community connection, recreation
	20	The amenity, community connection and recreation values of wetlands are better understood. Performance objectives are developed to enhance these values.	Access, participation, litter	Amenity, community connection, recreation
	21	The multiple benefits of waterways investment are tracked and understood.	Access, participation	Economic
	22	Cooler, greener and more liveable urban environments are created through revegetation and as part of managing excess stormwater.	Vegetation extent, access, stormwater	Vegetation, amenity, recreation
	43	The social values framework, information and methods used to develop values assessments, targets and performance objectives are further developed and improved during the life of the Strategy.	Access, participation, litter	Amenity, community connection, recreation

13.1 Community places RPOs intent

A summary of why each of the community places RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 34. Context and performance expectations for community places RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
19. Options to transform modified waterways by creating more natural, community-loved spaces are identified and implemented.	A place-based approach considers how the amenity of water and the natural environment can integrate seamlessly into a local urban context to benefit residents. The Reimagining Your Creek program lead by Melbourne Water is one example of how this might be done. This program is aimed at empowering communities to identify and participate in the improvement of waterway values in highly modified environments, to create more natural, community loved spaces.	By 2028 Melbourne Water and HWS delivery partners, community representatives and residents will have worked together to transform a number of stormwater drains and creeks into natural waterways. These waterways will provide desirable open spaces, where people can interact with nature in cooler, healthier environments. The waterway designs will have been informed by local knowledge, community values and priorities.
20. The amenity, community connection and recreation values of wetlands are better understood. Performance objectives are developed to enhance these values.	The key social values of the Healthy Waterways Strategy were focused on rivers and estuaries based on the available data for these assets at the time of strategy development. Wetlands were included as a separate asset class for the first time in the Strategy and it was established that very limited information or data was available about the status of these social values for wetlands. This represents a knowledge gap of the strategy and has been identified as an improvement opportunity as part of the	Social values for wetlands are described and documented in the improved social values framework and conceptual models developed as part of RPO 43. A pilot approach to identify social value status and supporting conditions (including development of performance objectives) for priority of wetlands has been developed, tested and peer reviewed. Social value and condition data have been collected to support the development of the new strategy by 2028.

	MERI framework. It is also anticipated that there may be nuanced opportunities for wetlands that differ from waterways due to the geographical structure and function of wetlands (e.g. nonlinear, isolated areas).	
21. The multiple benefits of waterways investment are tracked and understood.	Tracking the multiple benefits of waterways investment is important so that there is increased engagement and understanding across government, private sector and communities about needs to sustain the region's waterways Understanding the multiple benefits increases the capability to assess benefits from healthier waterways and hence better balance trade-offs between competing uses of waterways and water resources. This supports planning and investment decision making.	TBD – this RPO is in early stages of development and text will be provided in Phase 2
22. Cooler, greener and more liveable urban environments are created through revegetation and as part of managing excess stormwater.	The combined effects of a warming, drying climate with increased urbanisation will result in hotter urban environments and a reduction of natural space for an increasing population. In response, alternative opportunities must be found to protect and enhance the social values of waterways for communities across the region.	HWS partners have explored and implemented different approaches to creating cooler, green and more liveable urban environments along waterways. These approaches have been underpinned by data and evidence from research and pilot projects. Case studies and presentations have been shared with HWS partners to encourage learning and wider application within the region.
43. The social values framework, information and methods used to develop values assessments, targets and performance objectives are further developed and improved during the life of the Strategy.	The value that people derive through visiting and experiencing waterways was defined by three key values for the strategy; amenity, community connection and recreation. A framework and conceptual models were developed to articulate the logic of how management levers can impact on the conditions that support each of the	The social values framework and conceptual models are updated and approved by the Regional Leadership Group based on outcomes from research and applying new approaches to measuring social values and waterway conditions. A retrospective baseline for 2018 will be developed and peer reviewed to enable

	social key values. However, the data and metrics that informs conceptual models that set out the relationships between social values and waterway conditions are not yet mature enough to understand the quantitative nature of the relationship between condition and value. This means that we don't have strong evidence as to how much we need to change conditions in order to improve social values. Further work is required to improve the social values framework and conceptual models alongside development of a robust assessment method to measure quantitative improvements to the condition.	quantitative improvements in conditions and social value status to be made throughout the life of the strategy. The communication of the status of social values to community has matured which reflects new approaches adopted. Conflicts between social and environmental values of waterways is understood and guidance provided to practioners of how to navigate this.

13.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 35 and will be discussed with HWS delivery partners in Phase 2.

Table 35. Monitoring indicators and methods for community places RPOs

Community places RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
19. Options to transform modified waterways by creating more natural, community-loved spaces are identified and implemented.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. Local government
20. The amenity, community connection and recreation values of wetlands are better understood. Performance objectives are developed to enhance these values.	Annual progress report	To be determined in Phase 2	Melbourne Water – Land and collaborative Planning Other delivery partners e.g. DELWP
21. The multiple benefits of waterways investment are tracked and understood.	Annual progress report	To be determined in Phase 2	Melbourne Water – Land and collaborative Planning Other delivery partners e.g. DELWP

Community places RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
22. Cooler, greener and more liveable urban environments are created through revegetation and as part of managing excess stormwater.	Annual progress report	To be determined in Phase 2	Melbourne Water – Land and collaborative Planning Other delivery partners e.g. DELWP, Local government
43. The social values framework, information and methods used to develop values assessments, targets and performance objectives are further developed and improved during the life of the Strategy.	Annual progress report	To be determined in Phase 2	Melbourne Water – Land and collaborative Planning Other delivery partners e.g. DELWP

13.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

13.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

14 Engaged communities

During the development of the Strategy, discussions in each catchment highlighted the importance and need to enhance the community's knowledge and connection to waterways. There was agreement that broader community understanding of the key issues facing our waterways, as well as supporting people to find a connection to waterways, will likely lead to greater involvement and action for our waterways.

There are a number of performance objectives which relate to engaging communities that have been set regionally, as regional performance objectives (RPOs), and for rivers, wetlands and estuaries at the sub-catchment, as sub-catchment performance objectives (SCPOs).

Along with participation, there are several RPOs (Table 36) aimed at increasing community knowledge and engagement around waterways, including development of key messages and stories, developing systems and pathways for sharing information and fostering and celebrating leaders in waterway management.

Table 36. Summary of Engaged communities RPOs

RPO Group	RPO ID	RPO description	Link to waterway condition	Link to waterway values
Engaged communities	37	Participation rates in education, capacity building, incentive programs and citizen science activities have increased and enable greater levels of environmental stewardship for our waterways.	Participation	Community connection
	38	Key messages, stories and resources for waterways and waterway health are collaboratively developed and broadly distributed, increasing community knowledge and engagement around waterways.	Participation	Community connection
	39	Systems and pathways to share knowledge and information between communities and stakeholders have been developed and expanded to empower communities to participate and influence waterway management (for example, digital portals, social media, Communities of Practice, signage programs).	Participation	Community connection
	40	The profile of waterways is lifted, local connections to waterways are increased, and leaders in waterway management are celebrated and fostered.	Participation	Community connection

14.1 Engaged communities RPOs intent

A summary of why each of the engaged communities RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 37. Context and performance expectations for engaged communities RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
37. Participation rates in education, capacity building, incentive programs and citizen science activities have increased and enable greater levels of environmental stewardship for our waterways.	The importance and need to enhance the community's knowledge and connection to waterways was highlighted during the development of the HWS. In particular, increasing participation enables more people to understand the reasons for looking after our waterways and builds ownership and advocacy for local waterways. This RPO links to the sub-catchment participation performance objectives and in essence acts as the outcome to those sub-catchment POs at a regional scale.	By 2028: - More people have connected to waterways in their local area by demonstrating environmental stewardship - Increased participation rates in urban growth areas - Participation occurs via a number of channels with digital engagement enabling alternative ways for community to connect to their local waterway.
38. Key messages, stories and resources for waterways and waterway health are collaboratively developed and broadly distributed, increasing community knowledge and engagement around waterways.	Stories provide an accessible way for people to engage and connect with waterways. A good story makes it easier for people to share and become advocates. This RPO links to RPO 38.	Stories with a personal element and connection to waterways are being shared by communities and stakeholders. The stories are distributed through a variety of ways e.g. online, at events, social media and there is evidence that the stories are being shared and are helping to increase community knowledge and connection.

39. Systems and pathways to share knowledge and information between communities and stakeholders have been developed and expanded to empower communities to participate and influence waterway management (for example, digital portals, social media, Communities of Practice, signage programs).	Systems and pathways provide a foundation from which communities and stakeholders can connect and share knowledge. They can also help to build a community online via apps which can then contribute important local insights and record sighting of species. Providing multiple pathways for communities to participate and influence waterway management also encourages diversity both in terms of perspectives and experience.	Multiple systems and pathways are in place by 2028 that support diversity of community and stakeholder participation. More community groups are involved in participating in waterway management due to more options (via systems and processes) being available to support the participation. There is evidence that the systems and processes have contributed to collective impact by some communities on their local waterways.
40. The profile of waterways is lifted, local connections to waterways are increased, and leaders in waterway management are celebrated and fostered.	In the past, the benefits waterways provide society has been taken for granted. This has changed over time but it is important that the profile of our waterways is lifted to encourage people to continue to care about the health of their local waterway and to support the local champions that work tirelessly to protect the waterway.	To be determined in Phase 2 of Regional MEP development

14.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 38 and will be discussed with HWS delivery partners in Phase 2.

Table 38. Monitoring indicators and methods for engaged communities RPOs

Engaged communities RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
37. Participation rates in education, capacity building, incentive programs and citizen science activities have increased and enable greater levels of environmental stewardship for our waterways.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Community engagement team Other delivery partners e.g. PPCMA, Parks Vic, Local government
38. Key messages, stories and resources for waterways and waterway health are collaboratively developed and broadly distributed, increasing community knowledge and engagement around waterways.	Annual progress report	To be determined in Phase 2	Melbourne Water – Community engagement team Other delivery partners e.g. PPCMA, Parks Vic, Local government
39. Systems and pathways to share knowledge and information between communities and stakeholders have been developed and expanded to empower communities to participate and influence waterway management (for example, digital portals, social media, Communities of Practice, signage programs).	Annual progress report	To be determined in Phase 2	Melbourne Water – Community engagement team Other delivery partners e.g. PPCMA, Parks Vic, Local government

Engaged communities RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
40. The profile of waterways is lifted, local connections to waterways are increased, and leaders in waterway management are celebrated and fostered.	Annual progress report		Melbourne Water – Customer focus team

14.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

14.4 Potential lines of enquiry for evaluation

To be determined in Phase 2

15 Collaborative governance

The Healthy Waterways Strategy recognises that the community holds valuable local expertise, passion and continuous on-ground presence; and that institutions hold technical skill, resourcing, regulatory authority and broader contextual data. Bringing these together in a structured collaboration will leverage and make best use of all stakeholder's capabilities, resources and skills.

This group of regional performance objectives are centered around how we ensure we work and make decisions together (Table 39). Clear governance is required to coordinate and align collective action. This governance requires commitment both from key agencies and our engaged, knowledgeable community.

Table 39. Summary of collaborative governance RPOs

RPO Group	RPO ID	RPO description	Link to waterway condition	Link to waterway values
Collaborative governance	15	Victoria's planning system is used effectively to protect and enhance waterway values.	Physical form, vegetation condition, stormwater	All values
	16	Protection mechanisms are in place for headwaters to ensure that they are retained as features in the landscape for environmental, social, cultural and economic benefits.	Physical form, flow regime	All values
	33	A Region-wide Leadership Group and Catchment Implementation Forums are established to support work towards the vison and goals of the Healthy Waterways Strategy at the regional and catchment scales.	Participation	All values
	34	Waterway Labs are established as needed to tackle complex or region-wide priorities.	Participation	All values
	35	The effectiveness of the Leadership Group, Catchment Implementation Forums and Waterways Lab are evaluated, through ongoing feedback, and one interim and one final assessment undertaken during the life of the Strategy.	Participation	n/a
	36	The Catchment Implementation Forums improve the coordination of information and activities by catchment stakeholders and communities (while ensuring waterway management includes the whole of catchment perspective).	Participation	Community connection
	41	A monitoring, evaluation and reporting plan is in place by 30 June 2019.	All conditions	All values
	44	Web-based systems are established to report performance and measure outcomes of the catchment implementation forums (by 30 June 2020).	All conditions	All values

15.1 Collaborative governance RPOs intent

A summary of why each of the collaborative governance RPOs were developed and what the change the strategy aimed to achieve in 10 years is outlined in table below. This table was developed through internal discussions with the HWS team that developed the HWS and the teams now responsible for leading the delivery of these RPOs.

Table 40. Context and performance expectations for collaborative governance RPOs

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
15. Victoria's planning system is used effectively to protect and enhance waterway values.	Changes in land use and development have the potential to adversely affect waterway health, and the social and environmental values of waterways. The HWS acknowledges the important role of Victoria's planning system, and the role of State Government, councils and referral authorities under this system to help protect and enhance the region's waterways. Catchment and natural resource managers can support place-based approaches through local planning scheme amendments and setting development standards as part of providing referral authorities comments on strategic plans and development applications. Community groups can play an important role in working with government and industry to support adoption of best practice to ensure outcomes are focused on long-term ecosystem resilience and net community benefits and aspirations, including health, wellness and inclusion.	This is to be determined in consultation with HWS partners in phase 2

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
16. Protection mechanisms are in place for headwaters to ensure that they are retained as features in the landscape for environmental, social, cultural and economic benefits.	Headwater streams are the small and sometimes barely perceptible drainage lines that form the origin of most streams and rivers. They are important for the intrinsic values that they hold and the role they play in regulating the health of the broader waterway systems including Port Phillip and Westernport Bays. Headwater streams are increasingly under pressure from urban development which can transform them into a stormwater network comprising of impervious surfaces and pipes.	By 2028: - Headwater streams in urban areas are not piped and retained and or enhanced in the landscape - for both intrinsic values and downstream protection - Headwater waterways and corridors are an integrated part of stormwater treatment and as such can contribute to the SW targets in the HWS: - They are recognised for amenity values for the new community in the catchment - That there's room in the corridor for environmental, amenity and other essential service needs (e.g. water supply pipes) - Protection and rehabilitation of headwater streams on rural land mitigates water quality impacts such as nutrients and erosion and provides habitat linkages to streamside zones Mechanisms and guidance are in place to support these outcomes such as: - updated waterway corridor guidelines, new urban stormwater guidelines ensure standard apply to all waterways including headwaters, - The designated waterways layer is used all areas of planning e.g. PSPs, DSSs, other referral processes (by all delivery partners) and existing delivery programs are expanded to enable protection of headwater streams - There are increased / improved mechanisms (e.g. grants) to support implementation - Explicit Performance Objectives are set for headwater stream protection for urban, rural and forested areas by mid-term (2022/23).

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
33. A Region-wide Leadership Group and Catchment Implementation Forums are established to support work towards the vison and goals of the Healthy Waterways Strategy at the regional and catchment scales.	Clear governance is required to coordinate and align collective action to implement the HWS. This governance requires commitment both from key agencies and our engaged, knowledgeable community. The HWS has identified a Region-wide Leadership Group and Catchment Forums as a requirement of the governance process.	The RLG has been set up as an independently-chaired group who works collaboratively to advocate for the HWS and provide direction, influence and alignment to the HWS co-delivery partner organisations to help make co-delivery of the Strategy a success. The RLG have a term of reference that has been reviewed and updated at least once during the 10 year period of the HWS. The role and function of the Catchment Implementation forum is clear and objectives have been set for the forums. At least 1 Catchment implementation forum (in all catchments) has occurred annually with a consistent number of attendees and organisations demonstrating sustained commitment to implementing the HWS. RLG, catchment forums and labs have met according to schedule and 80% of core group members participate in the meetings.
34. Waterway Labs are established as needed to tackle complex or region-wide priorities.	Many of the factors influencing waterways are systemic and require input from organisations which may not be represented effectively at the Regional Leadership Group or Catchment Forums. The purpose of the Waterways Lab is to provide a forum to consider region-wide issues that require careful consideration and discussion. Participants in Waterway Labs will include a cross section of subject matter experts, researchers and relevant state and local government agencies and community groups.	Waterway Labs have been instituted on an as-needs basis as directed by the Regional Leadership Group to consider well-defined region-wide issues or questions. The outcomes from the Waterway Labs have led to the development of effective solutions based on collaborative effort. The RLG supports the findings of the Waterway Labs and commits to processes to deliver the solutions. Feedback on content and the process of Waterway Labs is regularly collected and evaluated to improve their appropriateness and effectiveness.

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
35. The effectiveness of the Leadership Group, Catchment Implementation Forums and Waterways Lab are evaluated, through ongoing feedback, and one interim and one final assessment undertaken during the life of the Strategy.	The development of the HWS was underpinned by an evaluation framework to track the effectiveness and value of collaboration and co-design. The framework was based on five levels of value creation, ranging from immediate value to transformative value. At the end of HWS development the transformative value of the strategy was high with 63 to 95% (across the 5 catchments) of respondents to a final survey consider themselves as co-owner of the strategy and 87 - 100% of respondents identified that they will advocate for the strategy and its approach. This RPO is designed to continue evaluation of governance and participation during HWS implementation.	An evaluation framework for the Region-wide Leadership Group, Catchment forum and labs has been developed. The value created by each catchment forums and labs is assessed according to the framework and an annual summary produced. An independent interim assessment of the effectiveness of the Leadership Group, Catchment Implementation Forums and Waterways Lab is conducted by 30 June 2022. Recommendations to improve effectiveness have been implemented where appropriate. A final independent evaluation of the effectiveness of the Leadership Group, Catchment Implementation Forums and Waterways Lab is conducted by 30 June 2026. The findings from the evaluation have been used to inform governance for the new HWS.
36. The Catchment Implementation Forums improve the coordination of information and activities by catchment stakeholders and communities (while ensuring waterway management includes the whole of catchment perspective).	The Catchment Forums provide an opportunity for multiple organisations to work to a common agenda to tackle deeply entrenched and complex problems. This will support the concept that large-scale social and environmental change comes from better cross-sector coordination rather than from the isolated intervention of individual organisations.	Catchment implementation forums have occurred across all catchments at least once annually. Changes to the structure and objectives of forums have been made where appropriate to improve the co-ordination of information and activities by HWS partners, industry and community. Case studies have been shared on the HWS online website demonstrating improved coordination of information and activities as a result of the catchment implementation forums.

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
41. A monitoring, evaluation and reporting plan is in place by 30 June 2019.	The establishment of monitoring, evaluation, reporting and improvement (MERI) processes at the start of the Healthy Waterways Strategy will ensure that the correct data will be gathered initially and throughout the duration so that a robust evidence-base can be drawn on to assess progress, effectiveness, impact and improvement opportunities.	A detailed monitoring, evaluation and reporting (MER) plan will be developed to support adaptive management from planning to Strategy completion. The monitoring, evaluation and reporting plan will: • present the program logic underpinning the Strategy • clarify the assumptions associated with the program logic and identify strategies to manage potential risks • identify the key questions for evaluation and establish processes to monitor progress within the framework of the statewide monitoring program • clarify the communication and reporting needs and identify the processes required to support these needs • enable lessons learned from monitoring and evaluation to be gathered and inform improvement • consider the monitoring, evaluation and reporting needs and practices of collaborating organisations • address data gaps for environmental, social, economic and cultural values to enable a more comprehensive assessment and communication of management priorities • facilitate synergies with the MER undertaken to support the Regional Catchment Strategy, the Yarra Strategic Plan, and other relevant plans or strategies

RPO description	RPO intent (why was it developed?)	Performance expectation (what does change look like in 2028?)
		• acknowledge and review State of the Bays and State of the Yarra reporting, as they provide relevant benchmark data. The MER plan will be in place by 30 June 2019 and will be reviewed, at minimum, on an annual basis to ensure it remains current and relevant to informing adaptive management.
44. Web-based systems are established to report performance and measure outcomes of the catchment implementation forums (by 30 June 2020).	Effective delivery of the HWS will require the commitment and collaboration of multiple agencies, traditional owner organisations and community stakeholders. A web based system is required to support the delivery by tracking performance of the strategy and reporting evaluation results to partner agencies and the community.	A web based system in the form of an independent HWS website is developed in 2020 to provide a transparent communication tool to track, report and evaluate the performance of the strategy. The website will be updated annually with data, graphs and progress reports for performance objectives and this information will be provide by Melbourne Water and HWS implementation partners.

15.2 Indicators and monitoring

The indicators for the RPOs are to be developed in Phase 2 of the Regional MEP development. The reporting responsibility for each RPO is outlined in Table 41 and will be discussed with HWS delivery partners in Phase 2.

Table 41. Monitoring indicators and methods for collaborative governance RPOs

Collaborative governance RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
15. Victoria's planning system is used effectively to protect and enhance waterway values.	Annual progress report	To be determined in Phase 2 of Regional MEP development	Melbourne Water – Water Services Planning team Other delivery partners e.g. Local government, MAV, DELWP
16. Protection mechanisms are in place for headwaters to ensure that they are retained as features in the landscape for environmental, social, cultural and economic benefits.	Annual progress report	To be determined in Phase 2	Melbourne Water – Water Services Planning team Other delivery partners e.g. Local government, MAV, DELWP
33. A Region-wide Leadership Group and Catchment Implementation Forums are established to support work towards the vison and goals of the Healthy Waterways Strategy at the regional and catchment scales.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. Parks Vic, DELWP, MAV, PPCMA, EPA
34. Waterway Labs are established as needed to tackle complex or region-wide priorities.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team

Collaborative governance RPO	Monitoring method / data	Indicators /evaluation criteria	Reporting responsibility
35. The effectiveness of the Leadership Group, Catchment Implementation Forums and Waterways Lab are evaluated, through ongoing feedback, and one interim and one final assessment undertaken during the life of the Strategy.	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. Parks Vic, DELWP, MAV, PPCMA, EPA
36. The Catchment Implementation Forums improve the coordination of information and activities by catchment stakeholders and communities (while ensuring waterway management includes the whole of catchment perspective).	Annual progress report	To be determined in Phase 2	Melbourne Water – Catchment Asset Management team Other delivery partners e.g. Parks Vic, DELWP, MAV, PPCMA, EPA
41. A monitoring, evaluation and reporting plan is in place by 30 June 2019.	Annual progress report	To be determined in Phase 2	Melbourne Water – Water Services Planning
44. Web-based systems are established to report performance and measure outcomes of the catchment implementation forums (by 30 June 2020).	Annual progress report	To be determined in Phase 2	Melbourne Water – Water Services Planning

15.3 Evaluation criteria (rubrics)

To be determined in Phase 2.

15.4 Potential lines of enquiry for evaluation

To be determined in Phase 2.

16 References

Alluvium (2017). *Healthy Waterways Strategy Waterway Science Conceptual Models*. Report developed for Melbourne Water by Alluvium Consulting, Melbourne.

Melbourne Water (2013). *Healthy Waterways Strategy: A Melbourne Water Strategy for Managing Rivers, Estuaries and Wetlands*. Melbourne Water, Melbourne.

Melbourne Water (2018). *Healthy Waterways Strategy 2018*. Melbourne Water, Melbourne.

Melbourne Water (2019). Healthy Waterways Strategy Monitoring, Evaluation and Improvement Framework. Report prepared for Melbourne Water by Alluvium Consulting Australia, Melbourne.

Melbourne Water (2020a). Healthy Waterways Strategy Resource Document. Melbourne Water, Melbourne.

Melbourne Water (2020b). Rivers Monitoring and Evaluation Plan Melbourne Water, Melbourne.

Melbourne Water (in prep. b) Sites of Biodiversity Significance Plan 2020. Melbourne Water, Melbourne.