

Port Phillip Bay Environmental Management Plan 2017–2027

Delivery Plan



December 2018



Environment,
Land, Water
and Planning

Acknowledgments

DELWP would like to acknowledge and thank all groups and individuals who have given time to provide input and review during the development of the Port Phillip Bay Environmental Management Plan 2017-2027 Delivery Plan.

The Victorian Government proudly acknowledges Victoria's Aboriginal communities and their rich culture and pays respect to their Elders past and present. We acknowledge Aboriginal people as Australia's first peoples and as the Traditional Owners and custodians of the land and water on which we rely.

We recognise the intrinsic connection of the Kulin nation people to Nairm (Port Phillip Bay) and its catchment, and we value their contribution in the management of land, water and the natural landscape. We support the need for genuine partnerships with Aboriginal people and communities, to understand their culture and connections to Country, and to better manage the Bay and its catchment. We embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

Cover photo credit

Marcia Riederer, DELWP

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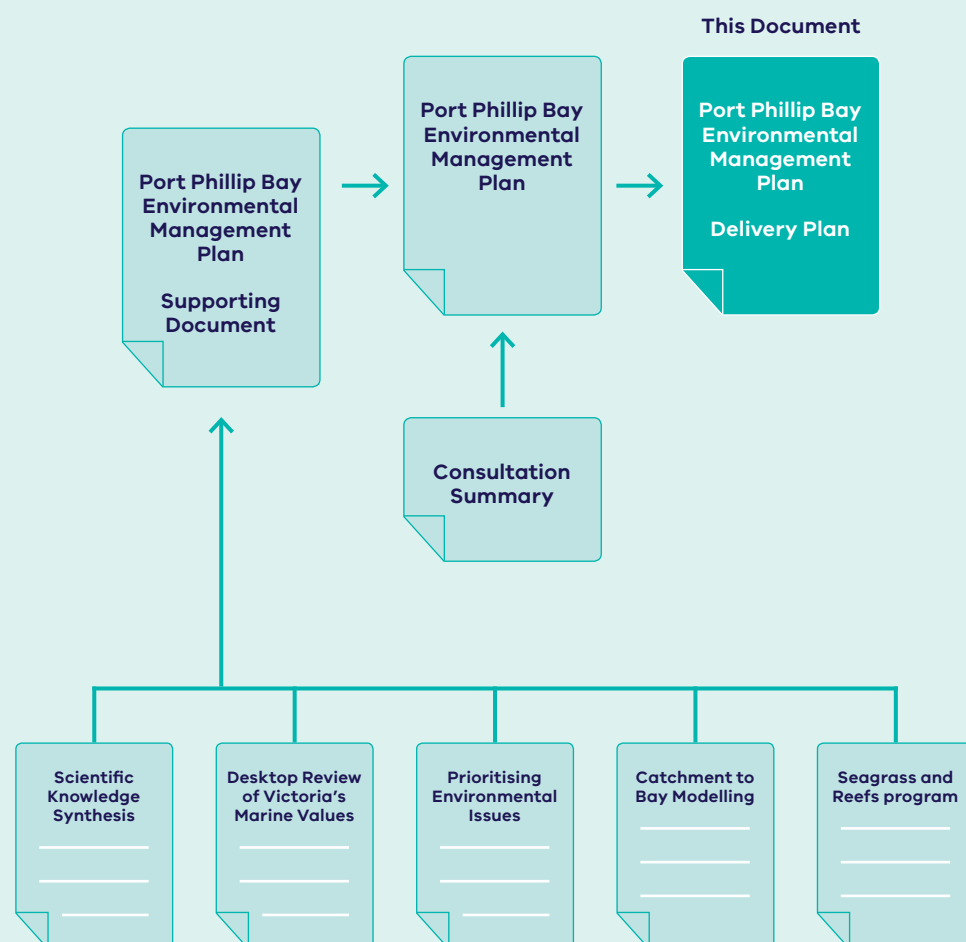
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1 Introduction & Purpose

The Port Phillip Bay Environmental Management Plan (EMP) was developed by the Department of Environment, Land, Water and Planning (DELWP) in partnership with Melbourne Water and the Environment Protection Authority (EPA) Victoria. It is informed by input and advice from government agencies, local government, industry, community-based groups and the broader public through a comprehensive program of stakeholder and community engagement¹.

This Delivery Plan outlines how the EMP will be implemented. It sets out a schedule of the EMP's priority actions and their subordinate activities, and identifies delivery partners, success measures, governance structure, and monitoring and reporting requirements.

Annual program results will be reviewed by DELWP and publicly reported each year. This Delivery Plan will be reviewed on a 5-yearly basis, guided by a monitoring, evaluation, reporting and improvement (MERI) strategy. A regular review cycle will allow for the Delivery Plan to respond to program success, and to any changes in the Bay's condition. The Delivery Plan is a live document, with an updated plan to be published each year.

This Delivery Plan is consistent with the approach and principles of International standard ISO 14001:2015 for environmental management systems. Alignment with the standard is achieved through a structured approach to the development and delivery of actions within the EMP, and putting in place a MERI strategy for the life of the EMP.

1.1 Authorising legislation

Since the release of the EMP in November 2017, there have been important changes to the authorising legislation that set the statutory requirements for the EMP.

1. In October 2018 the new State Environment Protection Policy (SEPP) (*Waters*) was approved and replaced the former SEPP (*Waters of Victoria*) under the *Environment Protection Act 1970*. The implementation of this EMP is now a requirement under Schedule 4, Section 3 of this new policy. The SEPP defines specific targets for water quality (nutrients, pathogens, sediment, etc) and the Bay's beneficial uses (or values) that must be protected, including marine life and habitats, water quality, community uses, commercial uses and resources, and industrial use.

2. The *Marine and Coastal Act 2018* came into effect on 1 August 2018 to provide a simple, integrated and coordinated approach to planning and managing the marine and coastal environment. It supports the vision of a healthy coast and marine environment in the face of long-term future challenges, such as climate change, population growth and ageing coastal structures. The current EMP is now taken to be an environmental management plan under Section 49 (3) of the Act. The implementation and reporting of the EMP is consequently now a statutory requirement of the Act and the Delivery Plan will serve as an Implementation Plan under this Act.

The Delivery Plan and MERI strategy will ensure the above legislative requirements are met.

¹ Refer to the *Port Phillip Bay Environmental Management Plan: Consultation Summary, 2017*

1.2 Program (actions, sub-actions, activities)

The EMP establishes a framework (Figure 1) to manage future challenges to the health and resilience of the Bay through a hierarchy of goals, priority areas and actions. It identifies 21 actions across seven priority areas that will deliver on the three goals²: improved stewardship, water quality and marine biodiversity.

This Delivery Plan only includes funded activities, across government, industry and the community, that align with the EMP's priority actions. These will be progressively achieved with new activities identified and added over the EMP's 10-year implementation. Annual progress reporting against actions and activities will provide a measure of the EMP's **outputs**, and the 5-yearly evaluation will measure the **outcomes** of actions and activities against Bay health indicators.



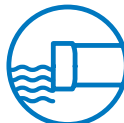




This staged and cyclical approach provides opportunity to respond to new information, resourcing and funding opportunities. It also provides regular measures of success against the EMP's overarching vision.

² Refer to the *Port Phillip Bay Environmental Management Plan 2017 – 2027*.



"A healthy Port Phillip Bay that is valued and cared for by all Victorians".

Figure 1. Port Phillip Bay Environmental Management Plan

VISION	A healthy Port Phillip Bay that is valued and cared for by all Victorians						
GOALS	Stewardship of the Bay is fostered across community, industry and government		Water quality is improved to ensure environmental health and community enjoyment of the Bay			The Bay's habitats and marine life are thriving	
PRIORITY AREAS	Connect and inspire	Empower action (work together)	Nutrients and pollutants	Litter	Pathogens (human health)	Habitat and marine life	Marine biosecurity
STRATEGIES	Improve appreciation and understanding of Bay values and connections to catchment	Improve collaboration and partnerships across community, industry and government	Ensure nutrient and sediment loads do not exceed current levels and pollutant loads are reduced where practicable	Reduce litter loads to the Bay	Minimise risks to human health from pathogens	Conserve and restore habitats and marine life	Manage risks from marine pests
							
PRIORITY ACTIONS	<p>1.1 Work with Aboriginal groups to improve understanding of Aboriginal cultural values and interests in the Bay and support connections to Country</p> <p>1.2 Develop and deliver programs to inspire greater appreciation of the Bay's values</p> <p>1.3 Build understanding of management responsibilities and programs for the Bay and its catchment</p>	<p>2.1 Build capacity and knowledge within community and industry networks</p> <p>2.2 Empower the broader community to get more actively involved in caring for the Bay</p> <p>2.3 Support stronger partnerships across community, industry and government to ensure aims and outcomes are aligned</p>	<p>3.1 Effectively maintain existing stormwater infrastructure and programs to mitigate loads to the Bay, or secure via equivalent means</p> <p>3.2 Prevent increases in nutrient loads from wastewater systems and where practicable reduce loads of other pollutants</p> <p>3.3 Ensure all urban and rural land use effectively controls impacts from stormwater and runoff, and that controls are in place to manage increases in loads</p>	<p>4.1 Establish a baseline estimate of the volume of litter entering the Bay and support clean up activities</p> <p>4.2 Support capability and capacity building programs that target litter prevention, including reduction of microplastics</p> <p>4.3 Identify and prioritise litter sources and pathways, and take actions to prevent litter entering the Bay</p>	<p>5.1 Improve understanding of links between pathogen concentrations and human health for swimming and consumption of shellfish</p> <p>5.2 Adopt a risk-based approach to mitigate sources of pathogens found in the bay</p> <p>5.3 Improve monitoring and reporting to better detect and communicate human health risks from pathogens</p>	<p>6.1 Monitor indicator species and key habitats at priority locations</p> <p>6.2 Improve understanding of ecological processes, threats and pressures</p> <p>6.3 Improve overall extent and condition of the Bay's natural ecosystems</p>	<p>7.1 Prevent introduction and dispersal of marine pests</p> <p>7.2 Monitor priority locations for early detection of marine pest introductions</p> <p>7.3 Respond rapidly to new introductions of marine pests</p>

2 Actions and Activities Schedule

See Appendix 1 for activity summaries

2.1 Stewardship of the Bay is fostered across community, industry and government

There are two priority areas under this goal. They focus on fostering a deeper community understanding of the values in the Bay and its management challenges and building stronger partnerships across the Bay's foundation of community networks to involve volunteers, researchers, agencies, local government and industries. This includes activities that will:

- Provide greater acknowledgement of the importance of Aboriginal values and support opportunities for Aboriginal groups to contribute towards managing the health of the Bay.
- Promote and implement community-based programs to raise awareness of the values and threats to the Bay, enable more people to connect with nature, and inspire greater environmental stewardship.
- Improve communication tools and reporting to promote active programs in the Bay and define the key responsibilities for Bay management.
- Foster and support learning and information-sharing networks between groups, industry and agencies such as citizen science programs.

Photo: Marcia Riederer, DELWP

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**CONNECT AND INSPIRE**

Improve appreciation and understanding of Bay values and connections to catchment

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
ACTION 1-1: Work with Aboriginal groups to improve understanding of Aboriginal cultural values and interests in the Bay and support connections to Country								
Activity 1-1-1 Investigate the expansion of the Aboriginal Waterway Assessment tool to include marine habitat sites	Aboriginal marine assessment tool						DELWP	TO groups/RAPs & Councils
Activity 1-1-2 Two projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Capacity building programs and employment opportunities						See appendix	See appendix
ACTION 1-2: Develop and deliver programs to inspire greater appreciation of the Bay's values								
Activity 1-2-1 Develop Bay values communication program, includes analysis of coastal values	Wave 5 marine & coastal community attitudes research						MCC	DELWP, PV & CES
Activity 1-2-2 Interpretation and education programs within Marine Protected Areas (MPAs)	Educational programs						PV	Community groups
Activity 1-2-3 14 projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Awareness raising, educational activities, on-ground restoration projects						See appendix	See appendix
Activity 1-2-4 One Coastcare project aligns with this action (see appendix for project details)	Awareness raising, educational activities, on-ground restoration projects						See appendix	See appendix
Activity 1-2-5 Assess the values of Victoria's marine environment including Port Phillip Bay	Collaborative inventory on marine environment values in Victoria						VEAC	DELWP

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
ACTION 1-3: Build understanding of management responsibilities and programs for the Bay and its catchment								
Activity 1-3-1 Maintain and improve environmental condition reporting online, including annual Report Cards, water quality alerts, and recreational water quality reporting programs (Yarra Watch and Beach Report)	Maintained and improved Report Cards, recreational reporting programs & alerts						EPA	DELWP, PV & MW

**EMPOWER ACTION**

Improve collaboration and partnerships across community, industry and government

ACTION 2-1: Build capacity and knowledge within community and industry networks								
Activity 2-1-1 13 projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Capacity building programs						See appendix	See appendix
Activity 2-1-2 12 Coastcare projects align with this action (see appendix for project details)	Capacity building programs						See appendix	See appendix
ACTION 2-2: Empower the broader community to get more actively involved in caring for the Bay								
Activity 2-2-1 Promote Bay activities through online resources	Newsletter & website updates						DELWP	Agencies & NGOs
Activity 2-2-2 11 projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Educational and volunteer building programs						See appendix	See appendix
Activity 2-2-3 Two Coastcare projects align with this action (see appendix for project details)	Educational and volunteer building programs						See appendix	See appendix

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
ACTION 2-3: Support stronger partnerships across community, industry and government to ensure aims and outcomes are aligned								
Activity 2-3-1 Four projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Opportunities for collaboration, events and recognition of volunteer environmental successes						See appendix	See appendix
Activity 2-3-2 One Coastcare project aligns with this action (see appendix for project details)	Citizen science and partnership building program						See appendix	See appendix
Activity 2-3-3 Development of a marine and coastal hub or centre	Scope of a marine and coastal hub model						DELWP	MCC
Activity 2-3-4 Victorian Coastal Wetland Restoration	Multi-partner collaborative project and restored wetlands						Deakin University	DELWP, CMAs, NGOs, Researchers, Agencies, TO groups & Industry

2.2 Water Quality is improved to ensure environmental health and community enjoyment of the Bay

There are three priority areas under this goal that aim to better manage nutrients, sediment and other pollutants flowing into the Bay to enhance the Bay's health and maintain good water quality. Activities that will help to achieve these priorities include:

- Undertaking audits and remediation of existing stormwater assets and investing in alternative approaches to improve stormwater management infrastructure.
- Greater monitoring and modelling to assess volumes of nitrogen and other pollutants and calculate cumulative annual loads discharging into the Bay.
- Improvements, guided by research, to wastewater treatment plants in the Bay's catchment.
- Supporting organisations involved in reducing the impact of litter and utilising their data to inform litter prevention strategies.
- Continuing research into contaminants of emerging concern to better understand risks to Bay health, human health and the consumption of shellfish.

Photo: Mel Hardie, DELWP



**NUTRIENTS AND POLLUTANTS**

Ensure nutrient and sediment loads do not exceed current levels and pollutant loads are reduced where practicable

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
ACTION 3-1: Effectively maintain existing stormwater infrastructure and programs to mitigate loads to the Bay, or secure via equivalent means								
Activity 3-1-1 Stormwater assets review	Audit report and investment plan						MW	Councils, EPA & DELWP
Activity 3-1-2 Stormwater assets maintenance program	Annual maintenance program (MW assets)						MW	Councils
Activity 3-1-3 Stormwater contaminants research	Research reports and innovative actions						MW	EPA & Researchers
Activity 3-1-4 Catchment and Bay monitoring and modelling	Loads report & SEPP attainment						MW	DELWP & EPA
Activity 3-1-5 Five projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Wetland systems and rainwater gardens to treat stormwater						See appendix	See appendix
ACTION 3-2: Prevent increases in nutrient loads from wastewater systems and where practicable reduce loads of other pollutants								
Activity 3-2-1 Septic Tank Management Pilot Program	Delivery and evaluation of pilot program						SEW	Mornington Peninsula Shire & MW
Activity 3-2-2 Wastewater contaminants research	Research reports						MW	EPA & Researchers
Activity 3-2-3 Western Treatment Plant (WTP) improvement works (investigations)	Works program						MW	EPA
ACTION 3-3: Ensure all urban and rural land use effectively controls impacts from stormwater and runoff, and that controls are in place to manage increases in loads								
Activity 3-3-1 A review of Urban Stormwater: Best Practice Environmental Management Guidelines (BPEM) (1999)	Revised stormwater standards						EPA	DELWP, Water Corporations, Councils & Industry

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
Activity 3-3-2 Integrated Water Management (IWM) forum programs	IWM plans and projects						DELWP	Water Corporations, Councils, CMAs, VPA & TO groups
Activity 3-3-3 Urban and rural land management program & delivery	Urban and rural land projects						MW	DELWP, CMAs, NGOs, Councils, community groups & land owners
Activity 3-3-4 Seven projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Urban and rural land projects, reducing excess nutrient runoff from fertiliser, and coastal biofiltration scheme						See appendix	See appendix
Activity 3-3-5 Catchment modelling to quantify nutrients under existing and likely future (2030 and 2050) land uses to inform management options	Modelling platform to quantify runoff and pollutant loads discharging to the Port Phillip Bay						DELWP	MW



LITTER Reduce litter loads to the Bay

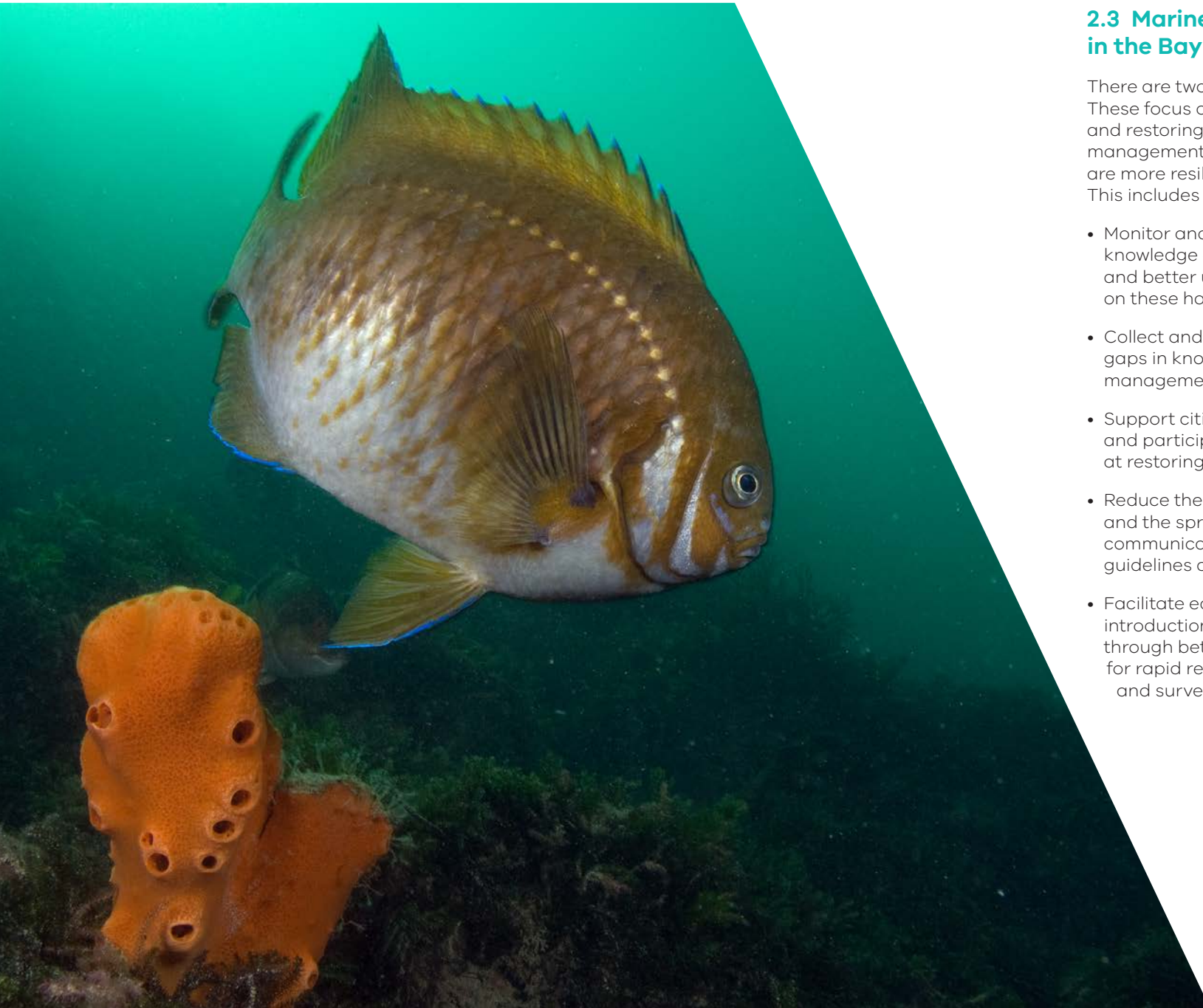
ACTION 4-1: Establish baseline estimate of the volume of litter entering the Bay and support clean-up activities								
Activity 4-1-1 Litter baseline assessment and annual survey program; National Litter Index	2018 Victorian Litter Plan and litter baseline estimate						DELWP	SV, Tangaroa Blue & Keep Australia Beautiful
Activity 4-1-2 Litter impact assessment (Research program)	Microplastics Citizen Science project						SV	Researchers, EPA, MW & NGOs
Activity 4-1-3 Yarra River Litter management programs	Litter management plan and targeted actions						PV	

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
Activity 4-1-4 Two projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Beach and street litter survey data, and educational & collaborative programs						See appendix	See appendix
ACTION 4-2: Support capability and capacity building programs that target litter prevention, including reduction of microplastics								
Activity 4-2-1 Regional Litter Plans under the 2018 Victorian Litter Plan	Litter plans using regional Victoria's data						SV	DELWP, Councils, Agencies & NGOs
Activity 4-2-2 Victorian Litter Action Alliance community-of-practice; behavioural/attitudinal research, 2018 Victorian Litter Plan	Capacity building program						SV	Councils, Agencies & NGOs
Activity 4-2-3 Six projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Rapid clean-up response program, targeted litter projects, and installation of pollutant traps/erosion control structures						See appendix	See appendix
Activity 4-2-4 Three Coastcare projects align with this action (see appendix for project details)	Capacity building programs and litter clean-up events						See appendix	See appendix
ACTION 4-3: Identify and prioritise litter sources and pathways, and undertake actions to prevent litter entering the Bay								
Activity 4-3-1 Litter hotspots identified through the National Litter Index	Litter measurement in Victoria project						SV	Councils, PV, Agencies & NGOs
Activity 4-3-2 Projects identified through Regional Litter Plans (2018 Victorian Litter Plan)	Works program to address key litter issues identified						SV	Councils, Agencies & NGOs
Activity 4-3-3 Three projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Source reduction plans to remove litter and identify hotspots						See appendix	See appendix

**PATHOGENS**

Minimise risks to human health from pathogens

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
ACTION 5-1: Improve understanding of links between pathogen concentrations and human health for swimming and consumption of shellfish								
Activity 5-1-1 Beach and waterway recreational water quality data analysis (continued)	Enhanced EPA Beach Report and Melbourne Water Yarra Watch end of season reporting and use of monitoring data for managing risk to recreational water quality						EPA	MW
Activity 5-1-2 Quantitative Microbial Risk Assessments (QMRAs) for marine recreational waters	QMRA report						EPA	
ACTION 5-2: Adopt a risk-based approach to mitigate sources of pathogens found in the Bay								
Activity 5-2-1 Drainage pathogen investigation, modelling and risk assessment in Elster Creek, Elwood	Report on impact of Emergency Relief Structure (ERS) discharges on microbial water quality during and after high rainfall events						SEW	Monash University
Activity 5-2-2 Trial of Beach Guard method for early detection of sewer spills	Trial and evaluation of Beach Guard						SEW	Monash University
ACTION 5-3: Improve monitoring and reporting to better detect and communicate human health risks from pathogens								
Activity 5-3-1 Improve Beach Report and Yarra Watch communication	Activities to improve communication and promotion of program by EPA Beach Report and Melbourne Water Yarra Watch program						EPA	MW, DELWP, Councils & media outlets
Activity 5-3-2 One project under the Port Phillip Bay Fund aligns with this action (see appendix for project details)	Improved Beach Report program and toolkit for citizen science						See appendix	See appendix



2.3 Marine Life and habitats in the Bay are thriving

There are two priority areas under this goal. These focus on taking an active role in protecting and restoring Bay habitats and improving management of marine pests to ensure ecosystems are more resilient through environmental change. This includes activities that will:

- Monitor and map key habitats to improve knowledge of spatial extent and condition and better understand the impact of stressors on these habitats.
- Collect and collate marine science data to inform gaps in knowledge and prioritise research and management intervention activities.
- Support citizen science programs to monitor and participate in on-ground activities aimed at restoring degraded habitats.
- Reduce the risk of marine pest introductions and the spread of pests through effective communication programs and developing guidelines and protocols for the state.
- Facilitate early detection of marine pest introductions by emergency management through better research, improving the capacity for rapid response and undertaking monitoring and surveillance programs at priority locations.



HABITAT AND MARINE LIFE

Conserve and restore habitats and marine life

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
ACTION 6-1: Monitor indicator species and key habitats at priority locations								
Activity 6-1-1 Review habitat classification and models for Port Phillip Bay	Improved habitat mapping						DELWP	PV, EPA, Researchers & NGOs
Activity 6-1-2 Implement a targeted monitoring program for Marine Protected Areas (MPAs) within Port Phillip Bay	MPA monitoring reports and infographics						PV	Researchers & community groups
Activity 6-1-3 Four projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Habitat monitoring reports, community involvement						See appendix	See appendix
Activity 6-1-4 One Coastcare project aligns with this action (see appendix for project details)	Citizen science monitoring program						See appendix	See appendix
ACTION 6-2: Improve understanding of ecological processes, threats and pressures								
Activity 6-2-1 Establish marine knowledge framework, to include a coordinated marine research program	Marine and coastal single database system; 'CoastKit'						DELWP	PV, EPA, Researchers & NGOs
Activity 6-2-2 One project under the Port Phillip Bay Fund align with this action (see appendix for project details)	Drift algae technical report						See appendix	See appendix
ACTION 6-3: Improve overall extent and condition of the Bay's natural ecosystems								
Activity 6-3-1 Shellfish reef restoration and supporting research	Reef restoration projects						TNC	DELWP, Researchers & community groups



MARINE BIOSECURITY

Manage risks from marine pests

Actions and activities	Deliverables	2017-18	2018-19	2019-20	2020-21	2021-22	Strategic lead	Partners
Activity 6-3-2 Two projects under the Port Phillip Bay Fund align with this action (see appendix for project details)	Reef & coastal restoration projects and green infrastructure case study						See appendix	See appendix
Activity 6-3-3 Optimal management of overabundant sea urchins in Victoria	Marine environment project to fill key knowledge gaps of overabundant urchins, a culling and monitoring program in key MPAs						NCCC	DELWP, Deakin University & PV
ACTION 7-1: Prevent introduction and dispersal of marine pests								
Activity 7-1-1 Training, assessment & community-based partnership to manage new incursions and spread of existing species	Marine pest management risk assessment and communication & engagement strategy						DEDJTR	DELWP, PV & EPA
Activity 7-1-2 Marine pest initiative within MPAs	MPA Implementation plans - response to new incursions						PV	DELWP, DEDJTR & VFA
ACTION 7-2: Monitor priority locations for early detection of marine pest introductions								
Activity 7-2-1 Marine pest monitoring program	Monitoring and surveillance program						DEDJTR	DELWP & PV
Activity 7-2-2 Marine pest monitoring and response program in MPAs	Monitoring program						PV	Museums Victoria, DELWP & community groups
ACTION 7-3: Respond rapidly to new introductions of marine pests								
Activity 7-3-1 Develop marine pest response arrangements	Revised marine pest response arrangements						DEDJTR	DELWP & EPA

3 Governance

Under the SEPP (*Waters*) DELWP, in conjunction with Melbourne Water and the EPA, is responsible for implementing the EMP, and for the monitoring, evaluation, reporting and improvement (MERI) activities.

DELWP will provide coordination and support functions for the people who can, and do, make a difference to Bay health. This recognises that the Bay is a complex management environment, with numerous government agencies and community organisations involved in its care and use.

Figure 2 illustrates the governance arrangements for implementation of the EMP, and Figure 3 the annual reporting cycle.

The **Project Control Group** comprises of Director level executives from lead government organisations who have a significant role in the EMP, through the Bay itself or through management of the catchment. These organisations will include: DELWP, Melbourne Water, and the EPA.

The Project Control Group's role is to:

- review and endorse any proposed changes to the EMP and Delivery Plan
- drive government review and endorse the annual reporting
- oversee the 5-yearly evaluation
- engage with the Senior Agency Reference Group to ensure alignment with other government policy, strategies and activities.

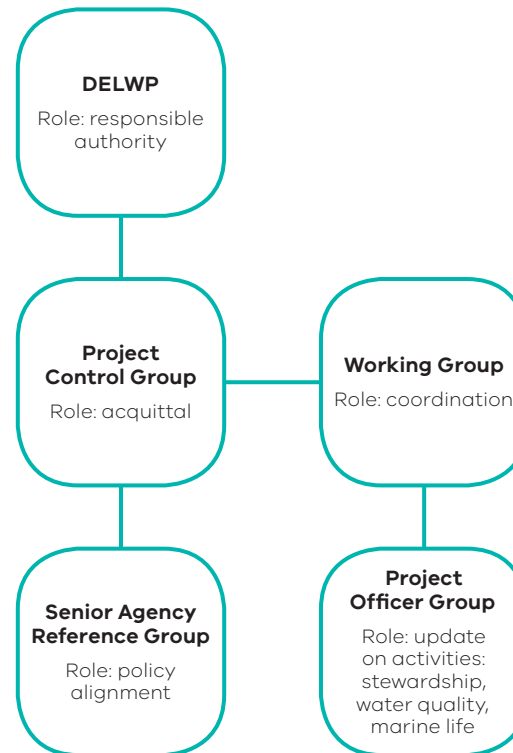


Figure 2. Governance Structure for implementation of the EMP

The **Working Group** will provide advice and support to the Project Control Group to enable efficient and effective progress with the current Delivery Plan and reporting cycle. They will work with delivery partners in the Project Officer Group to coordinate implementation of the EMP by monitoring activities and updating annual reports. The working group will also be responsible for identifying opportunities for collaboration and proactively championing the implementation of the EMP across agencies and stakeholders.

The **Senior Agency Reference Group** supports the Project Control Group, by providing advice on the alignment of other government initiatives with the EMP. They will also provide a mechanism for communicating issues of relevance for implementation of the EMP between agencies. Members include agencies such as: Parks Victoria, Department of Economic Development, Jobs, Transport and Resources (DEDJTR), Catchment Management Authorities, Water Corporations, Aboriginal Affairs Victoria, Local Government and Sustainability Victoria.

The **Project Officer Group** is an annual forum where delivery partners and organisations active in the Bay and catchment will come together to:

- connect and share knowledge around EMP actions and activities
- report to the Working Group on achievements towards the EMP outcomes
- identify gaps in delivery of the EMP actions
- promote activities and jointly seek funding opportunities.

The group will be organised by DELWP with support from lead agencies. Members of the Project Officer Group will also provide regular progress updates on current activities in the Delivery Plan over the year, and DELWP will provide partners with updates on delivery of the EMP.



Figure 3 Annual reporting cycle

4 Resourcing

The EMP provides the strategic direction and management priorities for improving Bay health and for maintaining the environmental, social and economic values of the Bay.

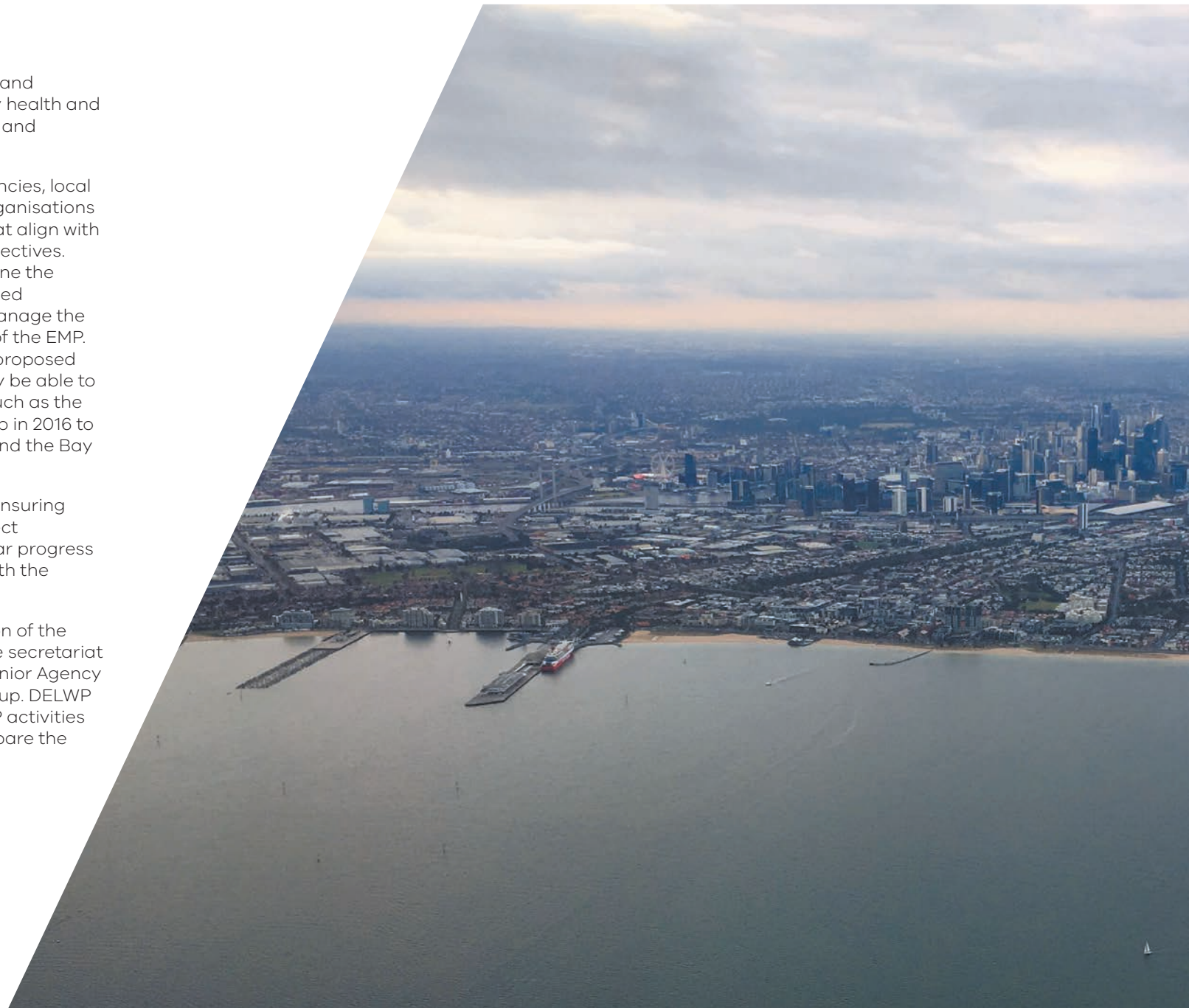
It is expected that state government agencies, local government, industry and community organisations will be able to identify future activities that align with the EMP and their own organisational objectives. Organisations (delivery partners) will define the budget required to undertake their planned activities, seek funding and effectively manage the delivery of activities under the umbrella of the EMP. Where there is clear alignment between proposed activities and the EMP, organisations may be able to access government funding programs, such as the Port Phillip Bay Fund. This fund was set up in 2016 to support community-based projects around the Bay to deliver priorities in the EMP.

Delivery partners will be responsible for ensuring that they have in place appropriate project management procedures and that regular progress updates are provided to DELWP in line with the reporting cycle (Figure 3).

DELWP will coordinate the implementation of the EMP and with the Working Group, provide secretariat support for the Project Control Group, Senior Agency Reference Group and Project Officer Group. DELWP will be aware of current and planned EMP activities and be able to collate information to prepare the annual reports.

Photo: Mel Hardie, DELWP

December 2018



5 Monitoring, evaluation, reporting and improvement (MERI)

The MERI is a key part of the overall delivery process. The Delivery Plan starts with the implementation of activities, and then is guided by the MERI strategy. The overall intent is to ensure the EMP is meeting its overarching goals and vision.

The aims of the MERI process are to:

- collect data that will clearly indicate the achievement of the outputs (activities undertaken) and outcomes (against the EMP's priority actions and against the Bay's key health indicators)
- evaluate whether the EMP's annual deliverables under the priority actions have been completed (acquittal), and in the long term, whether the Bay's health is improved (outcomes)
- annually report on priority actions, and evaluate every five years the achievement of the EMP's goals and vision
- drive continual improvement, including review of outputs and outcomes, and then consolidation or modification of activities to align to the EMP's goals.

The MERI strategy will link to other government agency monitoring and evaluation programs and utilise the results and/or data from these to help evaluate the EMP, including:

- EPA's water quality monitoring program
- Melbourne Water's waterways water quality program
- Parks Victoria's monitoring of marine protected areas
- DELWP, EPA & Melbourne Water's monitoring of nitrogen cycling processes in the Bay
- State of the Bays reporting and future State of the Marine and Coastal Environment report.

The MERI strategy will be important to the Project Control Group, Working Group and the Project Officer Group, as they will be involved in the oversight and delivery of the EMP's actions and activities.

The MERI strategy will have important information for the broader community audience who will also continue to be served by the government's public monitoring and reporting programs, such as:

- the 5-yearly State of the Bays report (and future State of the Marine and Coastal Environment report)
- EPA's annual Water Quality Report Card of the Bay (and surrounding catchments)
- EPA's summer Beach Report weekly bacteriological monitoring and the twice-daily water quality forecasts.

The MERI strategy will be developed with the Working Group and Project Officer Group over the first two years of EMP implementation to prepare for the 5-yearly review. The strategy will link to activities in the Delivery Plan to determine appropriate indicators for measuring success and clarify data custodians. Table 1 sets out the potential success measures and indicators for evaluation of the three EMP goals. The MERI strategy will continue to be reviewed to align with changes in the Delivery Plan.

Table 1. Potential success measures and indicators for evaluation of the EMP goals and outcomes

Goal	Strategies	Potential success measures	Potential indicators
Stewardship of the Bay is fostered across community, industry and government	Improve appreciation and understanding of Bay values and connections to catchment	Improved awareness of the EMP and Bay's values, fostering a deeper connection between the Bay and its residents, increased stewardship, and greater uptake of everyday actions to reduce impacts on the Bay	Participation rates and number of citizen science programs undertaken
		Traditional Owner groups are actively involved in management of the Bay, and the public have a better understanding of Indigenous values	Website analytics
	Improve collaboration and partnerships across community, industry and government	Greater levels of participation and partnerships, a sustained network of proactive, engaged communities and more custodians of the Bay	Participation rates
			Participation, and the number and distribution of peak advocacy groups and collaborative projects
Water quality is improved to ensure environmental health and community enjoyment of the Bay	Ensure nutrient and sediment loads do not exceed current levels and pollutant loads are reduced where practicable	No net increase in nutrient and sediment loads where SEPP (Waters) load targets are met, and pollutant loads are reduced where practicable	Load estimates from catchment modelling of run-off
			Waterways and effluent monitoring (quality and quantity) and cumulative loads
		Water quality around the Bay is improved, denitrification highly efficient, algal blooms avoided and levels of bioaccumulation in key species reduced	Ambient water and sediment quality monitoring
			Denitrification efficiency
	Reduce litter loads to the Bay	No net increase in volume of marine debris, litter and microplastics on beaches and in Bay water's	Occurrence of fish kills and algal blooms
			Volume of litter collected and survey data
	Minimise risks to human health from pathogens	Recreational water quality targets achieved for Bay beaches and improved reporting systems for managing human health risk	Number and location of litter management assets installed on drains and volume collected
			Pathogen concentration at beaches around the Bay
The Bay's habitats and marine life are thriving	Conserve and restore habitats and marine life	Marine ecosystem services are protected, maintained and resilient against current and future pressures	Number of beach advisories
			Habitat mapping and condition surveys
			Health of marine species and net area of habitat restored
			Data and results from citizen science programs undertaken
	Manage risks from marine pests	Boat users, port operators, shipping companies and aquaculture industry follow practices that minimise risk of marine pest being introduced into or spreading from the Bay	Economic accounting for marine ecosystem services
			Industry access to, awareness of and compliance with marine biosecurity guidelines
		Increased awareness, early detection if new incursions occur & capacity building for rapid response	Participation rates, data collection and status (abundance and distribution) of new and existing marine pests

5.1 Evaluation

The MERI strategy will use three key evaluation questions to assess the effectiveness and efficiency of the EMP. These are outlined in table 2 below.

There are already several programs that monitor and evaluate the condition (or ‘state’) of the Bay. These include regular monitoring of nutrients and other biophysical conditions, as well as monitoring of habitats, waterbirds and fish. In addition, State of the Bays report and future State of the Marine and Coastal Environment report will analyse this data and evaluate the effect of management programs on the outcomes. The MERI strategy recognises the synergies between these programs in delivering the EMP.

Table 2. Key evaluation questions for evaluation of the EMP goals and outcomes

Effectiveness	<i>‘Evaluation of the extent to which the Actions have been achieved and extent to which they have contributed to expected immediate and intermediate outcomes of the EMP.’</i>	1. To what extent were EMP actions and activities achieved? 2. To what extent were the long-term outcomes (goals) of the EMP achieved?
Efficiency	<i>‘Assessment of the value of the EMP in terms of cost, time and effectiveness of processes. And review of what could be done to improve delivery.’</i>	3. Were the EMP actions and activities delivered on time, within cost and to the quality expected?

5.2 Reporting

The MERI strategy requirements for the EMP – annual reports, and 5-yearly evaluation reports.

5.2.1 Annual report

Annual reports will be used to inform government agencies and other stakeholders on progress with delivery of actions. The annual reports will include activities undertaken and progress to date, highlights, lessons, and proposed adjustments if required. The primary audience for the annual report is the Project Control Group, and other stakeholders with responsibility of oversight and delivery of actions and activities. The annual reports will if needed, inform adjustment of actions or activities.

5.2.2 5-yearly evaluation reports

Empirical, investigative, logic-based, ‘scientific’ evaluation reports are most cost-effective at a more strategic planning frequency, such as every 5 years. While there is a desire to keep the effectiveness of the EMP under continuous review, in practice a period of time is required to allow the actions to take effect.

In addition, the State of the Bays report to be replaced by State of the Marine and Coastal Environment reports will be prepared every five years. This information is a key piece for understanding the longer-term ecosystem responses in the Bay. And much of the evaluation will be taken directly from these reports.

Evaluation reports will be a significant piece of work that builds on the information collected for the annual reports. They will be outcome focused, outlining actions that have been undertaken and the level of progress towards achieving the desired ten-year outcomes of the EMP. The evaluations will use multiple lines of evidence approach and refer back to the program logic to look for progress in any intermediate outcomes.

The evaluations will draw on the monitoring and reporting undertaken by other programs, such as the EPA’s water quality monitoring program together with targeted monitoring and reporting undertaken as activities within the EMP.

A summary of each report is outlined below:

	Annual Reports	Evaluation Reports
Purpose	Provide information to agencies to inform ongoing delivery of the EMP. Demonstrate program accountability and report on progress.	To report on the effectiveness and efficiency of the program.
Key evaluation questions	1. To what extent were EMP actions and activities achieved?	1. To what extent were EMP actions achieved? 2. To what extent were the long-term outcomes (goals) of the EMP achieved? 3. Were the EMP actions and activities delivered efficiently?
Audience	Project Control Group, Senior Agency Reference Group and Project Officer Group	Ministers, public, agencies, science community
Frequency	Annual – end of financial year in accordance with next year work planning / funding	Compiled at end of 5th and 10th year
Indicative content	Description of the actions Results (bullet point format) Activities undertaken and overall progress Status of monitoring and evaluation activities Case studies/activity highlights Recommendations for improvement	Ministers forward Context of the EMP in marine management EMP achievements What has been funded on ground and in capacity building What have we learnt Effectiveness of the program –performance stories, science, maps, case studies Efficiency of the program Future directions
Endorsed by	Project Control Group	Minister responsible for EMP

5.3 Improvement

The EMP MERI strategy will be implemented and adaptive management of EMP achieved through maintaining accountability through annual reporting and oversight by DELWP and the Project Control Group.

Where annual reporting reveals an area requiring improvement, the Project Control Group will be responsible for ensuring that the area receives closer management and evaluation of how improvements might be gained. Reporting to the Project Officer Group on this response will also help to ensure that momentum on implementation of the EMP is maintained.

6 Appendices

6.1 Appendix 1: Activity summaries

STEWARDSHIP – Connect & Inspire and Empower Action

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
1.1.1	1.2, 2.1, 2.3 & 6.1	DELWP	Investigate the expansion of the Aboriginal Waterway Assessment tool to include marine habitat sites	The purpose of the Aboriginal Waterways Assessment tool is to bring together local groups and individuals to develop a tool that consistently measures and prioritises river and wetland health so that Traditional Owners can more effectively participate in water planning and management. The purpose of this project will be to develop a similar initiative to extend to marine and coastal habitats.	2018	3
1.1.2 A	1.2, 2.3 & 3.3	Wurundjeri Land & Compensation Cultural Heritage Council Aboriginal Corporation	Western Waterways of the Wurundjeri	The creeks and waterways of Wurundjeri Country are important cultural places for Wurundjeri people. While there has been recent substantial focus around the Birrarung (Yarra) River, the Maribyrnong is also rich with cultural value. The Maribyrnong landscape, however, has been highly impacted by land clearing, rabbits and weeds. The proposed works will occur at the Kulin Wetlands (Brimbank Park) and Murrup Tam Boore, two culturally significant locations along the river. The Wurundjeri Narrap Team will conduct weed control, fencing and revegetation to reduce the impact of erosion and create a healthy habitat for local species in partnership with local groups. Funded by DELWP's Port Phillip Bay Fund	2018	2
1.1.2 B	1.2, 2.3, 3.3, 4.2 & 6.3	Bunurong Land Council Aboriginal Corporation	Indigenous Sea Rangers and Local Government delivering Bay Health objectives	The Bunurong Land Council Sea Ranger team will be contracted for 2 years to achieving Port Phillip Bay Plan objectives. This highly innovative and collaborative proposal allows Kingston City Council, Frankston City Council and Mornington Peninsula Shire to employ Aboriginal people at specific sites to achieve a healthier Port Phillip Bay. The Bay Funds will allow Rangers to be contracted to each municipality team for an equal number of a working hours per year. Additional funds are reserved for culturally sensitive sites. Sea Rangers will be trained and supported by PPWCMA and Trust for Nature. Funded by DELWP's Port Phillip Bay Fund.	2018	1
1.2.1	1.3	Marine and Coastal Council (MCC)	Develop Bay values communication program, includes analysis of coastal values	The MCC will be undertaking the Wave 5 marine and coastal community attitudes research 2018 will undertake social research into Victorian community attitudes and behaviour to the Victorian coastal and marine environments. The work is part of an ongoing series of social research surveys to gauge attitudes and behaviours in coastal use and management, identify what the community values about these environments, and track how these attitudes change over time. They provide a rich longitudinal data source on community values and behaviours about to the coast. This project is being delivered as an action (1.11) under the new <i>Marine and Coastal Act 2018</i> Final Transition Plan.	2018	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
1.2.2	2.1, 2.2, 2.3, 3.3 & 4.2	Parks Victoria (PV)	Interpretation and education programs within Marine Protected Areas (MPAs)	Engaging the community in understanding the bay's diversity of marine life and habitats, and threats such as marine pests, litter, disturbance of wildlife, or illegal fishing, is the focus for interpretation and education programs within the bays four MPAs. These activities are delivered by Parks Victoria rangers, through programs like Coastcare's <i>Summer by the Sea</i> , and by volunteer groups such as Marine Care Ricketts Point.	2017	2
1.2.3 A	2.1, 2.2, 2.3, 3.1, 3.3, 4.2 & 5.1	Bellarine Catchment Network (BCN)	Caring for our Bays Phase 2 - Corio Bay & Bellarine Peninsula	Caring for Our Bays is a multi-partnership alliance of community groups, government agencies and private businesses to improve the waterways along Corio and Swan Bays, Geelong and Bellarine Peninsula. This project will focus on stopping contaminants at the source and involve the various stakeholders conducting research, delivering infrastructure improvements, monitoring, and education related to littering behaviour and nutrients loads. Funded by DELWP's Port Phillip Bay Fund.	2017	1
1.2.3 B	2.1 & 2.2	Port Phillip and Western Port region, DELWP	Melbourne's Multicultural Coastcare / Landcare Team - a first for Victoria	A significant proportion of Victoria's population was born overseas. This initiative will endeavour to connect this community to the environment by developing a series of training modules based around the Werribee River, Lower Koroit Creek and Point Cook Coastal Park. It is hoped that it ultimately ends up with a culturally and linguistically diverse Coastcare/ Landcare team. Funded by DELWP's Port Phillip Bay Fund.	2017	2
1.2.3 C	2.2 & 4.2	Australian Wildlife Assistance, Rescue and Education (AWARE)	Waste, Wildlife & Our Waterways	Abandoned fishing line and discarded plastics are having an impact on our native fauna. AWARE Wildlife Rescue is developing a series of educational and information resources on the impact of abandoned fishing line, balloons, six pack rings and other plastics on marine species. These resources will be distributed at schools, community events and public events. Funded by DELWP's Port Phillip Bay Fund.	2017	1
1.2.3 D	2.2, 2.3 & 4.2	Darebin Creek Management Committee	Love Your Creek - Love Your Bay	The Darebin Creek Catchment runs through the Northern Suburbs of Melbourne (Woodstock, Epping, Thomastown, Ivanhoe), before ultimately running into Port Phillip Bay. The project intends to work with educational institutions to promote the impacts of localised litter in the school and sporting grounds, at home and on the street, makes its way to the creek, stormwater drains and ultimately the bay. It also intends for local schools to adopt a part of their creek to clean up to reduce litter and improve water quality. Funded by DELWP's Port Phillip Bay Fund.	2017	1
1.2.3 E	2.1, 2.2 & 3.3	Farming Moorabool	Teaching materials on how farmers are protecting the Bay through environmental stewardship	Farming practices have an impact on water quality across the state. This project will develop curriculum-based resources for educating school students and the community around Moorabool and surrounding districts about sustainable farming, which produces primary resources (food and fibre) while protecting the Bay and other environmental assets. Funded by DELWP's Port Phillip Bay Fund.	2017	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
1.2.3 F	2.2	Black Rock Pre- School	Black Rock Pre- School Beach Kinder	Development of a kindergarten program with a focus on the local environment (beach) in Black Rock. To work together as a diverse community group to improve our skills, knowledge, and enjoyment of our natural environment. To incorporate the beach and its surroundings into an exciting learning space for our community's children, their families and the educators. Funded by DELWP's Port Phillip Bay Fund.	2017	1
1.2.3 G	3.3 & 6.3	Friends of Greenwich Bay	Our Coastline on Melbourne's doorstep	Sandy Point Nature Reserve is currently feeling the effects of rabbit grazing, and uneducated use by visitors. This includes allowing dogs into the area disturbing migratory and resident shorebirds and making 'short cuts' to the shoreline through indigenous vegetation. Rabbit proof fencing will assist in revegetation growth and regeneration which is starting to occur on site. Also, by improving the functionality of this fence and installing some interpretative signage we hope to encourage more desirable behaviour amongst park users. These activities will have a profound impact on the indigenous vegetation and the surrounding shoreline ultimately encouraging native fauna and migratory shorebirds. Funded by DELWP's Port Phillip Bay Fund.	2018	1
1.2.3 H	2.2 & 6.1	Victorian National Parks Association (VNPA)	Broadening and deepening engagement and learning in Port Phillip Bay	This project will deepen community knowledge, connection & action for Port Phillip Bay through developing novel learning & engagement resources & activities for new audiences, specifically; families, through VNPA's Wild Families activities and resources; school teachers & students through developing resources related to VCE Outdoor & Environmental Studies curriculum; families and Balcombe Estuary Reserves Group Mt Martha culturally and linguistically divers community groups through providing new and innovative opportunities to build on our highly successful boost in engagement of the community during the 2017 Great Victorian Fish Count. Funded by DELWP's Port Phillip Bay Fund.	2018	2
1.2.3 I	2.1 & 2.2	St Aloysius Primary School	Inspiring Young Marine Science Experts - Stewards of Swan Bay	This proposal seeks to develop long-lasting mutually beneficial relationships between St Aloysius School and community and strategic partners. It will ensure community stewardship of Swan Bay and Port Phillip Heads National Park for many years to come. It is targeted at inspiring primary aged Marine Science experts and through them, teaching the wider community about the issues they learn in school. This initiative will help contribute to the broader health of the bay by ensuring that students and community are more familiar with the Port Phillip Bay environment, and how their actions can influence the things that live there. Funded by DELWP's Port Phillip Bay Fund.	2018	2

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
1.2.3 J	2.1, 2.2, 4.2 & 6.1	Mother of God Primary School	The Schools Caring for the Bay Project	The Project will address the issue of children from 6 schools in non-coastal settings (e.g. Sunshine, Dandenong) who would normally have little or no connection to the Bay, developing an understanding and taking action to care for the Bay, local waterways and their own school environments. They will learn from a range of marine experts about the Bay on water and on land. Learnings will be built by schools through developing student led citizen science action plans. Funded by DELWP's Port Phillip Bay Fund.	2018	2
1.2.3 K	2.1	Friends of Beware Reef	Discover Port Phillip Heads Marine National Park	Port Phillip Heads Marine National Park (PPHMNP) is an outstanding location within Port Phillip Bay that is popular with divers and snorkelers for the diversity of marine species that live on its rocky reefs. PPHMNP was established in 2002, but there are limited specific resources available for this well used park. Friends of Beware Reef seek to develop a marine species identification and diver guide to assist visitors and tour operators learn about its marine values as well as how to minimise their impact. This will be achieved by the production of two paper and online booklets. Funded by DELWP's Port Phillip Bay Fund.	2018	2
1.2.3 L	1.1, 2.1, 2.2, 2.3 & 4.2	Port Phillip EcoCentre	Leading the way to protect the Bay: Nerm events for Students and Teachers	On behalf of participating schools the Leading the way to protect the Bay: Nerm events for Students and Teachers will have an impact reach of 106,800 people through teacher and student environmental leadership events about Port Phillip Bay and its catchments. The teacher-focused Nerm Steps to Sustainability Conference will be held for 400 environment teachers and the student-focused Nerm School Sustainability Festival will be held for 240 students. The conferences and festivals share peer to peer curriculum-related content/ activities about Port Phillip Bay and its catchments, many aligned to STEAM (science, technology, engineering, arts and mathematics) and ResourceSmart Schools. Funded by DELWP's Port Phillip Bay Fund.	2018	1
1.2.3 M	2.2 & 2.3	Geelong Sustainability Group	Connecting your Bay: using creative media to inspire, empower and motivate.	Geelong Sustainability, partnered by community, industry and government organisations, will develop a suite of innovative educational films and complementary products (3D video and lesson plans) to holistically promote PPB's ecological values and management priorities. By incorporating and building onto existing works and integrating roles and responsibilities of partner organisations into the narrative, the film collection will engage, inform and empower the Bay community to become actively involved in safeguarding their Bay. Supported by a strategic distribution and engagement plan incorporating online portals, festivals and screenings, these films will reach schools, industry and community to maximise engagement and education value. Funded by DELWP's Port Phillip Bay Fund.	2018	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
1.2.3 N	1.1, 2.1 & 2.2	Yarra Riverkeeper Association	The Yarra Catchment Atlas	Over 40 community groups and organisations collect data and conduct regular activities within the Yarra Catchment. Few of these groups present their data on open platforms and most of this data is inaccessible to the public. The Yarra Riverkeeper Association would like to collaborate with groups to collect, collate and present Yarra catchment data on a single site: The Yarra Catchment Atlas. This atlas will build knowledge within community networks and will be a pivotal tool to assist our understanding of the cultural heritage, biodiversity and health of the Yarra Catchment and their links with Port Phillip Bay. Funded by DELWP's Port Phillip Bay Fund.	2018	2
1.2.4	2.1, 2.2 & 3.3	Balcombe Estuary Reserves Group (BERG) Mt Martha	Mt Martha Foreshore Consolidation & Extension Restoration	This project will contribute to ongoing work and extend work into new areas. Concentrating on protection and rehabilitation of indigenous vegetation, including planting and maintenance of previously planted species, weed removal, and refurbishment of the existing degraded exclusion fence to protect areas, prevent coastal erosion, prevent sand drifts encroaching and burying coastal vegetation, and prevent formation of informal tracks. Signage marking entrances and exits will assist foreshore users to locate the formal pathways. BERG Mt Martha and its Coastal Group will undertake community engagement with targeted information, interpretive signage and on-ground activities to help protect this fragile and vulnerable system. Funded by DELWP's Coastcare Community Grant.	2017	1
1.2.5	1.1, 2.1 & 6.2	Victorian Environmental Assessment Council (VEAC)	Assess the values of Victoria's marine environment including Port Phillip Bay	The VEAC is undertaking an assessment of the values of Victoria's marine environment at the request of the Minister for Energy, Environment and Climate Change and is an action (1.1) under the new <i>Marine and Coastal Act 2018</i> Final Transition Plan. The assessment, which is to be completed in March 2019, will bring together available information on marine values, threats to those values, and emerging uses. The aim is to provide a comprehensive, robust and independently collated evidence base, that can inform development of a statewide marine and coastal policy and strategy, the marine spatial planning framework and add value to the scientific background undertaken to develop this EMP.	2017	2
1.3.1	5.3	Environment Protection Authority (EPA)	Maintain and improve environmental condition reporting online, including annual Report Cards, water quality alerts, and recreational water quality reporting programs (Yarra Watch and Beach Report)	Maintain and improve online environmental condition reporting so that the Victorian public can easily access environmental and recreational water quality information and current alerts for water pollution. EPA will continue to work with state and local government, and water corporations to provide a single point of access for water quality information.	2017	5

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.1.1 A	1.2, 2.2, 2.3, 4.2 & 6.2	Dolphin Research Institute (DRI)	Expanded i sea i care coastal ambassador program	In 2015 a trial project was run in some Victorian Secondary Schools to promote the "I sea, I care" Coastal Ambassador Program. This program works with a series of Ambassadors and provides them with opportunities to experience different projects and then report back on these adventures to their classmates through peer-teaching, public speaking, writing articles and supporting social research. The program aims to interact with another 24 schools and 240 ambassadors to potentially engage with over 100,000 people. Funded by DELWP's Port Phillip Bay Fund.	2017	3
2.1.1 B	1.2, 2.2 & 4.2	1st/14th Brighton Sea Scouts Venturer Unit	Scout clean-up and audits of beaches for micro-plastics and erosion	The Scouts at Holloway Beach, Brighton have been undertaking research and beach audits to understand impacts of erosion and microplastics on the health of Port Phillip Bay in conjunction with the St. Kilda Eco-Centre. This project will deliver a training resource for other scouting groups to follow to undertake their own audits promoting responsibility for "their" beach, including rubbish collection. Funded by DELWP's Port Phillip Bay Fund.	2017	1
2.1.1 C	1.2, 2.2 & 4.2	AWARE	Waste, Wildlife & Our Waterways	This is a continuation of our successful "Waste, Wildlife & Our Waterways" program that we conducted last year, which encouraged community stewardship of coastal areas by reducing plastic litter. The threat of discarded plastics & abandoned fishing lines is a vital issue for us as we are often called to situations where birds & other animals are entangled or have ingested these wastes. We will develop engaging & informative materials for community members which AWARE volunteers will take to classrooms, community groups, & public events. We will emphasise the risks for wildlife when plastic waste enters our waterways. Funded by DELWP's Port Phillip Bay Fund.	2018	1
2.1.1 D	1.2, 2.2, 2.3, 4.2 & 4.3	Werribee River Association	Litterblitz - raising awareness, partnerships and volunteerism to combat the threat of litter to the bay	The project will identify litter hot spots adjacent to waterways in Wyndham, where litter is potentially destined for the bay, and carry out practical on-ground activity to clean up at those places, assist facilitation of new volunteers and partnerships in picking up that litter, and educate school students, community and organisations on the benefits of avoiding the creation of litter. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.1.1 E	1.2, 2.3, 2.2 & 4.2	BCN	Caring for our Bays - Connecting Community and Business to the Bay	The Caring for our Bays program (CFOB) aims to address the increasing threat of plastics in our oceans, through lifting the profile and appreciation of Corio Bay and Port Phillip Bay through a collaborative focus on preventing litter at its source. CFOB improves infrastructure and signage, engages community and business, delivers litter education and clean-up events and develops educational material. CFOB has successfully developed strong partnerships with land-managers and community groups and now aims to connect with the local business sector for the program to become a vehicle that can drive community and businesses alike towards healthier bays. Funded by DELWP's Port Phillip Bay Fund.	2018	2

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.1.1 F	1.2, 2.1, 2.3, 3.3 & 4.3	PrimeSCI, Swinburne University of Technology	Healthy Rivers, Healthy Bay	Our activities affect the health of Port Phillip Bay. The “Healthy Rivers, Healthy Bay” initiative aims to raise community awareness within two major catchments (Yarra and Dandenong) feeding into the Bay. We will instil a sense of ownership and environmental stewardship through student and teacher workshops, with a focus on local waterways as part of a larger catchment, highlighting stormwater/litter issues, undertaking water quality testing and litter audits. “Riverbank Rescue” events will link schools, local councils and environment groups. At the end of year Student Leadership Conference, students will compare results and develop action plans to help their local environment. Funded by DELWP’s Port Phillip Bay Fund.	2018	2
2.1.1 G	1.2, 2.2, 3.3 & 4.2	Friends of Williams Road Beach	Furthering health of foreshore and vulnerable bay habitats: ongoing revegetation and education	Bushland restoration along the Mt Eliza Coast has been underway since 2003, with a view to improving the vegetation quality and resilience of 2.6Ha of vulnerable Coastal Headland Scrub. This work program utilises both volunteers and contractors in the propagation of seeds, planting and hand-weeding, litter control and education of community groups. This instalment will involve contractors in the removal of weeds in newly treated and steep areas and education of the local scouting group, whose meeting hall is within the area, on environmental responsibility for the Bay. Funded by DELWP’s Port Phillip Bay Fund.	2017	1
2.1.1 H	1.2, 2.2 & 3.3	Friends of Beleura Cliff Path	Restore indigenous vegetation on Beleura Cliff Path	The Beleura Hill Cliffs at the end of Mills Beach in Mornington, contain a significant remnant of vulnerable Coastal Headland Scrub. This area is under threat from erosion and weed invasions. Safe access to this area is from the Beleura Cliff Path which transverses thorough this area, as the cliffs are very steep. The project will plant to create a terrace alongside the path, in which deep rooted indigenous plants will be planted to create a future seed bank and stabilise the cliffs. Funded by DELWP’s Port Phillip Bay Fund.	2017	1
2.1.1 I	6.2	Friends of the Hooded Plover (Mornington Peninsula)	Protective fencing to protect Hooded Plover habitat nests and chicks	Mornington Peninsula National Park (MPNP) has over 5 million visitors per year. It is home to the vulnerable Hooded Plover. Hooded Plovers lay their eggs directly on the sand in a nest scrape above the high-tide mark or in the dunes. The installation of permanent fencing will direct beachgoers onto the beach using formalised paths, rather than making numerous tracks through the dunes. This reduces erosion impacts and risks of egg/chick crushing. Funded by DELWP’s Port Phillip Bay Fund.	2017	1
2.1.1 J	1.2, 2.2 & 3.3	Mornington Peninsula Shire	Restoring Coast Banksia Woodland, across the Mornington Peninsula	There are highly valued coastal dune environments and endangered Coast Banksia Woodland that extend from Mt Eliza to Portsea. This project will include the rehabilitation of sand dunes and coastal banksia woodland with the construction of fencing, removal of invasive species, revegetation with indigenous species, habitat restoration and working with local community groups to monitor the works. Funded by DELWP’s Port Phillip Bay Fund.	2017	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.1.1 K	2.2 & 3.3	Frankston Beach Association	Frankston Beach Association Gould Street/ Beach Street and Gould Street/Palm Court Dune Revegetation Project	The primary objective to revegetate and restore approximately 5,000sq./m of degraded coastal dune. Site1 Beach St and Gould St site is some 3712 m2 heavily infested with <i>Gazania</i> Sp. Site 2 Gould St and Palm Court site some 1273 m2 heavily infested with <i>Aeonium</i> , <i>Crassula</i> and <i>Artemisia</i> . Removing weeds will be followed by planting 5000 species of endemic coastal flora. New plants will consolidate the thin strip of dunes and strengthen the existing endemic plant population. Enhancing the 7km coastal remnant flora is the major priority. This will provide a contiguous corridor for native flora and fauna. Funded by DELWP's Port Phillip Bay Fund.	2018	1
2.1.1 L	1.2 & 3.3	BERG Mt Martha	Community & BERG Mt Martha Together - Protection, Rehabilitation and Restoration of Coastal Habitat	Maintain, Restore and Protect the Vulnerable & Threatened Mount Martha Coast Banksia Woodland and Foreshore: The Project aims to further the health of the habitat & protect biodiversity values across priority areas via ongoing weed management - reducing weed infestation impacting on threatened indigenous vegetation and enabling endemic species regeneration and revegetation. Create natural protection - vegetation buffer zones along foreshore dune areas and within the reserve. Rationalise access tracks and restore Indigenous vegetation along highly visible and trafficked pathways and a selected roadside verge to create and maintain the visual aesthetics and amenity of the reserve. Develop community capacity & engagement. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.1.1 M	1.2, 2.2, 3.3 & 6.2	BirdLife Australia	Avalon Coastal Reserve: Restoring a Forgotten Gem in Port Phillip Bay	Avalon Coastal Reserve (ACR) has not historically been managed for its ecological values and habitat quality for migratory shorebirds has declined significantly over the last ten years. Now under the management of Parks Victoria, we have a unique opportunity to restore this part of Port Phillip Bay and foster greater community awareness and stewardship of the reserve. This project will deliver important research and on ground works to restore ACR through a range of high priority actions that wouldn't otherwise be financially possible. This project will therefore lay an important foundation for the long-term management of this internationally significant site. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.1.2 A	1.1, 1.2 & 3.3	Friends of Williams Road Beach	Furthering habitat Resilience and Cultural Heritage understanding, Mt. Eliza foreshore	This community project will continue to improve habitat quality in 2.6 hectares of Coastal Headland Scrub, Coast Banksia Woodland and Berm Grassy Shrubland. This includes registered middens and grant funding will be used to further the Baden Powell Park Scout Group's understanding of Aboriginal Cultural Heritage, in addition to the ongoing bushland restoration works. An educational day will take place with trained volunteers working with small groups of scouts on waste recycling, understanding the effects of plastics on marine life, bushland restoration, and our funded lecturer providing Cultural Heritage awareness training. Funded by DELWP's Coastcare Community Grant.	2017	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.1.2 B	1.2	Marine Education Science and Community (MESAC)	Activity Leaders Manual	MESAC supports Marine Care Ricketts Point (MCRP), a 250-member volunteer group based at Ricketts Point Marine Sanctuary. MCRP's knowledge base has recently declined with people's movements and the group seeks to upskill and increase its public education activities. MESAC has the skill base and track record to develop an Activity Leaders Manual for MCRP and run an appropriate introduction for a small group of appropriate volunteers. The training manual will be at a Citizen Science level, well-illustrated, and approximately 100 pages long. Funded by DELWP's Coastcare Community Grant.	2017	1
2.1.2 C	1.2 & 3.3	Mount Eliza Association for Environmental Care (MEAFEC)	Weed Control and Re-vegetation Ranelagh Beach Foreshore Reserve	MEAFEC has been undertaking weed control and revegetation works south of Earimil lookout and have implemented weed control and revegetation of the Ranelagh Rocks area. This project is stage 1 of linking these two high quality sites. The project will focus along the northern boundary of Earimil Creek estuary and includes the removal of woody weeds. Further to weed control, planting will be undertaken of locally sourced tube stock to replace the weed species and reduce the possibility of erosion from future extreme climatic events, as well as enhancing diversity. Funded by DELWP's Coastcare Community Grant.	2017	1
2.1.2 D	1.2, 2.2 & 6.1	Friends of Mud Islands	Habitat Preservation on Mud Islands: Promoting Community Awareness and Collaboration	Mud Islands is a small yet significant group of islands in the Port Phillip Bay Marine National Park. The Friends of Mud Islands is a volunteer group which assists the care, maintenance and preservation of these unique islands which are registered as a RAMSAR wetland of international importance. By preserving the island's ecological health and values, volunteers can positively impact and contribute to a healthy viable habitat. This funding will assist and provide access for works including rubbish removal, weed reduction, awareness and education, community involvement, bird monitoring, seagrass monitoring, and collaboration between individuals and community and environmental groups. Funded by DELWP's Coastcare Community Grant.	2017	1
2.1.2 E	1.2 & 3.3	Friends of Williams Road Beach	Creating habitat resilience, extending the habitat corridor & reducing plastic	This project, ongoing since 2003, will commence after the completion of current Coastcare grant. Requested funding will enable the contractor to undertake weed-control amidst depleted Coastal Headland Scrub and Foredune, immediately south of 2.7ha of restored habitat. This will vastly reduce the flow of wind-blown weeds to these retention areas and, along with planting 300 site indigenous species, will increase the habitat-corridor by 116 metres. Maintenance weeding and the pickup of plastic pollution will also be undertaken by Friends. These actions will increase bay health and further resilience, biodiversity, and stability in the restored sites and the extended corridor. Funded by DELWP's Coastcare Community Grant.	2018	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.1.2 F	1.2 & 3.3	Friends of Fisherman's Beach	Linley Point/Fisherman's Beach Weed Removal and Indigenous replanting	Despite the iconic nature of Linley Point on the Mornington shoreline, the coastal headland scrub has become quite degraded over the years. Building on work done by the Friends Group and the Green Army in 2017, the revegetation grant will return a substantial central area of the Linley Point to healthy indigenous cover, enhancing the central park/rotunda as a public recreation facility. The grant will also complement previous weed removal and revegetation by the Green Army and the Friends Group along Fisherman's Beach from Wilsons Rd roundabout to Fisherman's Beach car park, focusing on high-threat weed control. Funded by DELWP's Coastcare Community Grant.	2018	1
2.1.2 G	1.2 & 3.3	MEAFEC	Weed Control and Re-vegetation Ranelagh Beach Foreshore Reserve	MEAFEC has been actively working South of Earimil lookout undertaking weed control and revegetation works to restore the natural Indigenous vegetation along the Mount Eliza Foreshore. Over the past seven years MEAFEC have implemented various weed control and revegetation works on the Ranelagh Rocks area at the North end of Ranelagh Beach. This project is stage 2, which is providing a biolink between two high quality vegetation polygons. This work will extend existing works north along the upper Ranelagh Beach Escarpment. The project will include control of high threat weeds and planting of indigenous locally sourced tube stock. Funded by DELWP's Coastcare Community Grant.	2018	1
2.1.2 H	1.2 & 3.3	Silverleaves Conservation Association	Protection and Enhancement of Coast Banksia Woodland	This project will remove three large pine trees from the foreshore reserve that threaten biodiversity, control weeds that threaten Coast Banksia Woodland, and weeds that threaten Hooded Plover habitat. This project also includes revegetation in Coast Banksia Woodland and Coastal Dune Scrub with indigenous coastal species, monitoring and protection of threatened Hooded Plovers, and the design, production and installation of an interpretational sign and design and dissemination of fridge magnets to educate and raise awareness of the area's significant environmental values. Funded by DELWP's Coastcare Community Grant.	2018	1
2.1.2 I	2.3	BERG Mt Martha	Vegetation Survey & Assessment of Mount Martha Coastal Vegetation	The BERG Mt Martha will provide a baseline inventory of Mt Martha foreshore reserve by surveying and mapping vegetation using Google Maps and spreadsheets to present the information. We will set up a single, central, accessible database that will streamline and enhance data collection, and allow data-sharing within BERG Mt Martha and with key stakeholders, environmental groups and interested parties. We will build on this inventory with ongoing data collection from surveys and monitoring and will use it in planning for biodiversity and habitat management, weed control and revegetation. Funded by DELWP's Coastcare Community Grant.	2018	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.1.2 J	1.2 & 3.3	McCrae Homestead Coastal Group	Enhancement of McCrae Coastal Habitat	This project aims to remove invasive weeds along the McCrae foreshore; particularly the scramblers, provide continued weed and routine bushland maintenance of existing revegetated areas and those areas which have been previously cleared of woody weeds, and to enhance and protect the diversity of the coastal habitat by planting out indigenous species in a target area within that section of the McCrae foreshore where work is undertaken by the McCrae Homestead Coastal Group along Pt Nepean Road. Funded by DELWP's Coastcare Community Grant.	2018	1
2.1.2 K	1.2 & 3.3	Friends of the Beleura Cliff Path	Revegetate, monitor drainage, and prevent erosion of Beleura Cliff Path	The century old popular Beleura Cliff Path traverses a wild, scenic area which contains significant remnant Coastal Headland Scrub vegetation. This cliff forms part of a wildlife corridor linking Mornington with Mount Eliza, it suffers erosion and weed invasion. This project will support planting a dense strip of plants along the path to strengthen the path edges and create a seedbank for the cliff below. The Friends of Beleura Cliff Path can monitor drainage and erosion problems as they emerge, and are partway towards fixing the path's lower edge, this grant will be used to tackle the upper edge. Funded by DELWP's Coastcare Community Grant.	2018	1
2.1.2 L	1.2 & 3.3	Mornington Environment Association	Red Bluff Mornington rehabilitation	This project will continue the work previously undertaken by the Friends Groups and Green Army. Activities include: mulching, planting, and treatment of noxious and environmental weeds (manual removal & spraying). This work will protect and improve the fragile coastal dunes of Red Bluff area and reduce the chance of future erosion of the cliffs. It will also increase the diversity and structure of native vegetation, providing habitat for flora and fauna. Community participation will further educate the wider community on environmental values and threats, especially in this highly utilized and iconic area of Mornington. Funded by DELWP's Coastcare Community Grant.	2018	1
2.2.1	1.3 & 2.1	DELWP	Promote Bay activities through online resources	More than mapping activities or communication, there is a need for a resource across the catchment to link all the regional community groups. This activity will develop and identify innovative new tools and expand the use of existing tools to support citizen science and on-ground community action.	2017	5
2.2.2 A	1.1, 1.2, 2.1, 3.3 & 4.2	Port Phillip EcoCentre and Werribee Riverkeeper	Living Water Workbees: private/public co-creation of weather-resilient Bay and catchments	This project will deliver a number of events around Elster Creek (Elwood) and Werribee River (Bacchus Marsh, Werribee) which can be used to remove litter and improve water quality along the bay. These events will generate volunteer hours which can be converted into "Living Water Rebates" which can be used to deliver storm water diverting infrastructure to filter and recycle rainwater. Funded by DELWP's Port Phillip Bay Fund.	2017	3

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.2.2 B	1.2, 2.3, 3.3 & 4.2	Frankston City Council	Bay Friendly Businesses - stormwater impacts	The City of Frankston is undertaking a program with approximately 300 food service outlets to educate businesses as to how storm water impacts the water quality of Port Phillip Bay, and encouraging them and their patrons to get involved in keeping the bay clean. Through this program the City will determine which, if any, premises are leaching waste materials into the storm water network and work with them to rectify any issues or take the appropriate compliance responses as appropriate. Funded by DELWP's Port Phillip Bay Fund.	2017	1
2.2.2 C	1.2, 2.1 & 4.2	Beach Patrol Australia	Help Save Sam Seadragon	Beach Patrol undertakes a number of beach litter clean up events annually around Port Phillip Bay, cleaning up the beach in the short term and uses their collections to inspire community education about the impact of plastics in the bay. This project will enable a broader distribution of the message "Port Phillip marine life and plastics", targeted at children, into 100 community settings (schools, lifesaving clubs, community groups and public events). Funded by DELWP's Port Phillip Bay Fund.	2017	1
2.2.2 D	1.2, 2.1, 2.3, 3.3 & 4.2	Cardi Creek Kids	Cardi Creek Kids: Creek to Coast	Cardi Creek Kids wishes to complete revegetation, litter collection & engagement works at key sections of a Dandenong Catchment waterway to improve water quality flowing into Port Phillip Bay. Troops Creek flows into Eumemmerring Creek which flows into Port Phillip Bay at Carrum Beach. Community groups representing key sections of the waterway will participate, including Friends of Carrum Foreshore, Friends of Eumemmerring Creek and Cardi Creek Kids, who will form Friends of Troops Creek. With support of Melbourne Water & City of Casey, this project will contribute to forming a biolink from creek to coast. Funded by DELWP's Port Phillip Bay Fund.	2018	1
2.2.2 E	1.2, 2.1, 4.2 & 4.3	The Scout Association of Australia, Victorian Branch	Street to Bay - Litter Survey of Port Phillip Bay Catchment	Responding to a lack of reliable data on the source of litter and pollution entering Port Phillip Bay, this youth-centred, data and impact-driven project will employ Scout Association youth to survey street litter sources at different land use areas (residential, retail, and industrial), develop a representative database of litter sources across the entire Port Phillip Catchment, to propose alternative solutions for litter management, and build awareness campaigns to change community behaviour. The project aims to better understand the source of the problem and inspire youth to drive change in both the community and the data to impact policy. Funded by DELWP's Port Phillip Bay Fund.	2018	2

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.2.2 F	4.2	Yarra Riverkeeper Association	Lower Yarra Reed Bed Blitz Clean	The Yarra River is the largest contributor of litter into the Bay. Much of the litter entering the Bay is trapped in reed beds in the lower Yarra. These areas are extremely difficult to access. Furthermore, the small size of litter in these areas make litter collection time consuming and expensive. This project aims to remove accumulated waste from reed beds in the lower Yarra River using a unique approach which incorporates a boat mounted vacuum system. This study will greatly reduce the amount of litter and microplastics escaping into the Bay protecting the 12 000 species that call the Bay home. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.2.2 G	1.2, 2.1 & 6.2	School of Geography, The University of Melbourne	Citizen-Science Drones for Bayside Beach Habitat	Citizen-science drones aims to provide the equipment and training for local communities to embrace the latest in drone technology with the most recent scientific advances in coastal science to ensure the protection of the beach and dune habitats of Port Phillip Bay both now and in a future warmer world. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.2.2 H	1.2, 2.1 & 4.2	Port Phillip EcoCentre	Global Melbourne: Empowering diverse residents and visitors to protect our Bay	Melbourne is global, with 2.5 million international visitors annually and 40% of residents born overseas. Due to language barriers or lack of networks, it is hard for these communities to learn about and protect our Bay. This project connects previously unreached residents and visitors to Port Phillip Bay, by engaging 3 hostels and tourism companies, training 8 local 'Multicultural Bay Ambassadors', and producing multi-lingual films. We will run 100 Baykeeper activities, foster "eco-active" tourism, and guide decision-making to reduce litter and other threats to water quality and biodiversity, both during Bay visits and conducting daily life and business in catchments. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.2.2 I	1.2, 2.1, 2.3, 4.2, 4.3	Centre for Aquatic Pollution Identification and Management, The University of Melbourne	The Litter Trackers: Reducing Littering by Education	Most litter that ends up in Port Phillip Bay comes from the catchments. Education is an integral tool for achieving long-term change in community behaviours and reducing litter in waterways and the Bay. The Litter Trackers program will be the first study of its kind in Victoria to deploy GPS-tracked litter at 20 sites within PPB catchments to demonstrate the life of litter once it leaves a person's hand and reaches our waterways. This project will provide strong educational tools that can be used in schools, councils and by government. Funded by DELWP's Port Phillip Bay Fund.	2018	2

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.2.2 J	1.2, 2.1 & 4.2	Marine Mammal Foundation	Bin Not Bay: Education and Community Outreach Programs to Inspire and Empower Bay Health Stewardship	The Bay is a 1930km ² marine environment which many catchment communities have little access to, nor detailed knowledge of, the important habitat which the Bay provides for marine fauna, including the endangered Burrunan dolphin. Our multi-faceted education and community outreach programs provide a 'whole-of-catchment' approach to building community knowledge which inspires, connects and empowers local action, such as correct litter disposal, to improve the health of the Bay. Our programs foster appreciation and connection to Bay values to better understand and protect aquatic habitats and ecosystem functions, demonstrating the link between positive local action and downstream benefits for catchment health. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.2.2 K	1.2, 2.1, 6.3 & 7.2	OzFish Unlimited	Bay Vision: Recreational fishers restoring the Bay's fish habitats	There are over 614,000 recreational fishers using Port Phillip Bay every year, but recreational fishers play only a very small role in reporting on and restoring the health of the Bay. This project will target recreational fishers to play a greater role in the restoration the health of the bay; by using proven methods of recreational fisher communication to inform fishers of the issues and opportunities for fish habitat management; by developing a citizen science project reporting on fish, fish habitat and biosecurity issues and increasing engagement with on ground works restoring riparian zones, wetlands and shellfish reefs. Funded by DELWP's Port Phillip Bay Fund.	2018	2
2.2.3 A	1.2 & 2.1	Port Phillip EcoCentre	Culturally and Linguistically Diverse (CALD) Coast Ambassadors	Meaningful and sensitive engagement with CALD communities regarding coastal management and values is challenging for environmental not-for-profits. Limited resources, language barriers and not understanding issues through a cultural lens, contribute to these communities being left out of engagement. This project will develop the skills of 3 CALD young people or students to be "Coast Ambassadors" to champion coastal engagement events and projects among their own or another CALD community with the long-term outcome of engaging more CALD volunteers in monitoring and management of beaches and coastal areas around Melbourne. Funded by DELWP's Coastcare Community Grant.	2017	1
2.2.3 B	1.1, 2.1, 2.3 & 3.3	St Columba's Primary School / Port Phillip EcoCentre	St Columba's Caring for our Coast	St Columba's Primary School is committed to advancing our community-wide sustainability leadership. Over one third of Victoria's bird species, as well as Australian and international migratory birds, visit or reside in the Elster Creek coastal zone. The lower creek and foreshore also provides habitat for species like the Southern Water Skink. And Elster Creek still hosts a thriving eel population that underpinned the pre-settlement Boon Wurrung economy. This project will inspire St Columba's families to participate in community Citizen Science activities, 250 locally indigenous tube-stock will be planted, and a locally meaningful curriculum will be developed and integrated. Funded by DELWP's Coastcare Community Grant.	2017	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.3.1 A	1.2, 2.2, & 2.3	DRI	Bays Conference/ Celebration for community	DRI will develop a “Bays Web Hub” and an annual “Bays Conference/ Celebration”. Funded by DELWP’s Port Phillip Bay Fund.	2017	3
2.3.1 B	1.2, 2.1, 2.3 & 3.3	Loci Environment and Place	Our Future City: ‘Linking by Design’ Competition	A cross-disciplinary design competition for university students demonstrating how multiple environment and community benefits can be achieved while delivering its key role of improving the health of Port Phillip Bay. Multiple benefits can include ideas such as human thermal comfort, biodiversity, soil health, community placemaking, indigenous knowledge sharing, play spaces, community orchards, active transport, renewable energy, carbon sequestration and more. Funded by DELWP’s Port Phillip Bay Fund.	2017	1
2.3.1 C	1.2, 1.3, 2.1 & 2.2	Remember the Wild	Connected to Port Phillip Initiative: Bringing People and the Bay Together	This initiative will bring together Port Phillip Bay’s various stakeholders to foster stewardship for the Bay and its connected waterways. Government and Non-Government Organisations will work together to improve appreciation and understanding of Bay values, leading to greater awareness of behavioural impacts and positive solutions within the community. This will be achieved through co-designing priority messaging for dissemination through digital resources (videos, infographics, etc.), a sign-up program for local businesses to voluntarily demonstrate their own environmental stewardship, and summer festivals to engage the broader community and give a positive platform for stakeholders to recruit volunteers and further educate the public. Funded by DELWP’s Port Phillip Bay Fund.	2018	2
2.3.1 D	1.1, 1.2, 1.3, 2.1, 2.2, 3.3 & 6.3	Mornington Peninsula Shire	Friends, working together to improve the bay	This project will directly assist the work of 10 Friends Groups across Port Phillip Bay (the Bay), who, with the Mornington Peninsula Shire are working in partnership to protect biodiversity values and enhance community assets. The project will be: addressing Sea Spurge (<i>Euphorbia paralias</i>) inundation; encouraging community participation through a Friends Group Network event; strengthening relationships with Bunurong Land Council; targeting environmental and noxious weeds species. This project will open up new opportunities for community groups to expand and consolidate their current work areas while raising awareness of invasive species, cultural heritage, and protecting the bay. Funded by DELWP’s Port Phillip Bay Fund.	2018	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
2.3.2	2.1	Friends of the Hooded Plover (Mornington Peninsula)	Fostering Community Participation and Protection for a flagship Coastal Species; the Red-capped Plover	Friends of the Hooded Plover (Mornington Peninsula) Inc. Working with BirdLife Australia Beach-nesting Bird team have run a successful citizen science Red-capped Plover (RCP) project since 2015. This group will foster new partnerships by organising a 'Peninsula Swap' event for Bellarine Bayside Peninsula BirdLife (RCP) volunteers and relevant land managers to visit Westernport to attend a Beach-nesting Bird workshop and field trip to enhance skills and knowledge, thereby keeping cohesive and consistent approaches to RCP management. A banding program will assist identification and better understanding of RCP breeding strategies and population dynamics. Improved signage will keep beach users updated and informed. Funded by DELWP's Coastcare Community Grant.	2018	1
2.3.3	1.1, 1.3, 2.1 & 2.2	DELWP	Scoping the development of a marine and coastal hub or centre	This project is being delivered as an action (1.9) under the new <i>Marine and Coastal Act 2018</i> Final Transition Plan. DELWP will scope the development of a hub that connects people in the marine and coastal management sector so that science, research and technical expertise and education underpin excellence in decision-making in the marine and coastal environment.	2018	1
2.3.4	1.1, 1.2, 2.2, 3.3 & 6.3	Deakin University	Victorian Coastal Wetland Restoration	The Victorian Coastal Wetland Restoration project will guide and undertake restoration of ~600 hectares of critical wetland habitat on private and public land across the state (including RAMSAR sites and places of Aboriginal cultural heritage significance), thereby facilitating recovery of some of Victoria's most endangered birds, frogs and other threatened plants and animals. The project has identified four locations in Port Phillip Bay. Funded by DELWP's Biodiversity Response Planning Marine Environment Targeted Actions initiative.	2018	3

WATER QUALITY – Nutrients & Pollutants, Litter, and Pathogens

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
3.1.1	4.2 & 5.2	Melbourne Water (MW)	Stormwater assets review	This activity will involve auditing stormwater management assets to assess whether they are meeting their design intent for capturing nutrients, sediment and other pollutants (includes toxicants and litter).	2017	2
3.1.2	4.2 & 5.2	MW	Stormwater assets maintenance program	Following review of stormwater assets this activity will determine effective ways to remediate and maintain assets to ensure Bay wide reduction targets are achieved and investigate remediating those assets that are failing to meet their design intent.	2017	5
3.1.3	5.1	MW	Stormwater contaminants research	This activity includes detection of pollution impacts on bay and waterway ecology from emerging contaminants, pesticides and other toxicants and the development of new bioassays for early detection of detrimental effects.	2017	5
3.1.4	3.2, 3.3, 5.1 & 5.3	MW	Catchment and Bay monitoring and modelling	To maintain a monitoring network to support estimation and reporting of nutrient and pollutant loads to the Bay, and relative contributions from sub-catchments and different land use types. This work will involve publishing annual monitoring reports (includes load estimates and contributions from stormwater management assets) and improving catchment modelling (Source) will the aim of identifying priority sub-catchments and land-use types to target for improved stormwater management.	2017	5
3.1.5 A	1.2, 2.1, 2.2 & 3.3	Richmond West Primary School	Richmond West Rainwater Garden - a multicultural school community connecting with the Bay	Runoff water from many properties enters the storm water system into one of the tributaries and onto Port Phillip Bay. Richmond West Primary School will be creating a rainwater garden to slow and filter runoff from the property which will highlight to students and the broader school community about the environmental values of Port Phillip Bay and how it is linked together. Funded by DELWP's Port Phillip Bay Fund.	2017	1
3.1.5 B	1.2, 2.1, 2.2, 3.3 & 4.2	St Columba's Primary School	St Columba's: Operation STEAM (Science, Tech, Engineering, Arts, Maths) Clean the Bay	St Columba's Primary School in Elwood is looking to transform its landscape, curriculum and leadership programs to improve Port Phillip Bay. One of their projects will be to address runoff water from the school property through the installation of a series of gardens including a rainwater garden to slow and filter run-off which coupled with curriculum activities (indigenous and eco-system content) will highlight to students the environmental values of Port Phillip Bay. This will also be promoted to the broader community through clean up days. Funded by DELWP's Port Phillip Bay Fund.	2017	3

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
3.1.5 C	1.2, 2.1, 2.2, 3.3, 4.2 & 6.3	Conservation Volunteers Australia	RAMSAR Wetland Connectivity and Bay Health Protection through Community Action	The western side of Port Phillip Bay is host to three significant wetlands. These are in the Point Cook Coastal Park, Spit Nature Conservation Park and adjoining lands (Corio Bay), and the Port Phillip Heads Marine National Park, Queenscliff. These wetlands are critical to providing a healthy ecosystem for Port Phillip Bay. The aim of this project is to undertake a variety of tasks which will improve the foreshore vegetation and water quality in the three wetland areas including weed management, appropriate planting in water retarding basins to filter nutrient run off into the Bay, enhancing species diversity, litter removal and community education campaigns. Funded by DELWP's Port Phillip Bay Fund.	2017	1
3.1.5 D	2.2 & 3.3	Whitecliffs To Camerons Bight Foreshore Reserves Committee of Management	Tyrone Foreshore Camping Ground Drainage Upgrade	This project is designed to prevent stormwater discharge from the camp ground road network into Port Phillip Bay. The existing drainage discharges into Port Phillip Bay via an outfall drain. The discharge will be diverted into an underground soak pit. Funded by DELWP's Port Phillip Bay Fund.	2018	1
3.1.5 E	1.3, 2.1, 2.3 & 3.3	Werribee River Association	Bridging troubled waters - linking community groups with pollution tracking technology	This project aims to reduce threats to Port Phillip Bay health by determining sources of pollutants in the Werribee River using smart stormwater solutions and leveraging of community partnerships. Innovative monitoring technology will enable stakeholders such as Melbourne Water, EPA and Wyndham Council to identify pollution reduction priorities within the Werribee catchment. Targeted point-source pollution reduction strategies and education & awareness programs coupled with Water Sensitive Urban Design and stormwater treatment will reduce pollution inputs to the bay. Funded by DELWP's Port Phillip Bay Fund.	2018	2
3.2.1	2.3	South East Water (SEW)	Septic Tank Management Pilot Program	The pilot project introduced a levy for septage received at the Boneo Recycled Water Treatment Plant. The levy and funding from Melbourne Water is being used by Mornington Peninsula Shire to trial an electronic monitoring system for the maintenance of 600 septic tanks systems in high-risk areas over a period of at least three years. This trial is the first such system to be trialled by a Victorian council.	2017	2
3.2.2	5.1	MW	Wastewater contaminants research	This activity includes undertaking research to understand ecological effects of Western Treatment Plant nitrogen discharge. Understand the potential to maintain nitrogen discharge to enhance bay values.	2017	5
3.2.3	3.3	MW	Western Treatment Plant (WTP) improvement works (investigations)	This activity includes a program undertaking improvement works at the WTP to ensure that nitrogen loads to the Bay do not exceed 3100 tonnes per year (as a three-year rolling average).	2017	3

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
3.3.1	2.3 & 3.1	EPA	A review of Urban Stormwater: Best Practice Environmental Management (BPEM) Guidelines (1999)	To review the Urban Stormwater BPEM guidelines so that they reflect current scientific knowledge, and industry and regulatory best practice. The BPEM guidelines establish stormwater quality objectives to help determine the level of stormwater management necessary to meet the new State Environment Protection Policy (SEPP) (<i>Waters</i>) objectives. The SEPP policies are statutory under section 16 of the Environment Protection Act 1970 that identifies the beneficial uses of Victoria's waterways.	2017	3
3.3.2	1.1, 2.3 & 3.1	DELWP	Integrated Water Management (IWM) forum programs	Integrated water management is a collaborative approach to planning, bringing together organisations that influence all elements of the water cycle including: waterways and bays; wastewater management; alternative and potable water supply; stormwater management; and water treatment. This activity will establish forums to prioritise opportunities for collaboration and incorporate community and Traditional Owner values into urban place-based planning to reduce nutrient and pollutant loads to waterways from rural and non-residential urban land. Forums will be established for the five major waterway catchments.	2017	5
3.3.3	1.2, 2.1, 2.2 & 2.3	MW	Urban and rural land management program & delivery	To continue to invest in education/extension programs and grants for implementing improved practices.	2017	5
3.3.4 A	1.3 & 2.3	Balliang Food and Fibre Group	Optimising fertiliser application rates to reduce excess nutrient runoff	Commercial nutrients used for farming can find its way into our waterways and onto the Bay, resulting in overstimulation of some plant life. This project is testing a prototype nutrient budgeting tool for 8 trial farms, with a view to refining fertiliser and seeding rates. It will also include an evaluation of the residual nitrogen levels to ensure that the nitrogen which has been applied is absorbed and the accuracy of the tool. Funded by DELWP's Port Phillip Bay Fund.	2017	2
3.3.4 B	3.1	Mornington Peninsula Shire	Upgrading Beach Drainage Outlets	Water catchments discharge into Port Phillip Bay via natural creeks and via drainage outlet structures. Mornington Peninsula Shire has 162 of these structures. There is potential for beach drainage outlets to have restricted functionality, structural defects and impacts on public health, the natural environment, public amenity and aesthetics. The structures in Mornington Peninsula Shire have been assessed and the project aims to upgrade 21 existing outlets to improve the overall health of Port Phillip Bay. Funded by DELWP's Port Phillip Bay Fund.	2017	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
3.3.4 C	1.2, 1.3, 2.1, 2.2, 2.3, 3.1 & 4.2	Yarra Ranges Council	River to the Bay, Creating Healthy Waterways	The project involves addressing pollution, including litter, sediment run off and septic discharge, at its source (Yarra River and Dandenong Creek). The program will enable behaviour change through education, active community engagement and initiatives reducing the need for pollutants. Assessment of waterway health, via water quality and pollutant trap monitoring, will inform practical and realistic treatment and maintenance systems and ensure the ongoing effectiveness. Funded by DELWP's Port Phillip Bay Fund.	2017	3
3.3.4 D	1.2, 2.1, 2.2, 4.2 & 6.3	Friends of Westgate Park	Community enhancing Westgate Park's wetlands	Westgate Park in Port Melbourne is a series of reclaimed sites near the mouth of the Yarra River which has taken work to rehabilitate. The park includes 1.5 Ha of land which was previously a drainage channel and road reserve which is currently of little environmental value. This project will enable removal of litter, improvements to the drainage channel and planting the area with indigenous plants which would have been in sand belt area around Port Phillip Bay. Funded by DELWP's Port Phillip Bay Fund.	2017	2
3.3.4 E	1.2, 2.1, 2.2, 4.2 & 6.3	BERG Mt Martha	Better Bay Water Quality - Balcombe Estuary Riparian Restoration & Improvement, Mt Martha	The Balcombe Estuary and Creek is the largest most intact estuary on the east side of Port Phillip Bay near Mount Martha. The quality of water in the estuary is impacted by a decline in local vegetation, increase in rubbish and human and pet use. The project will restore and enhance the creek edge through weed control and planting of indigenous plants, removal of rubbish, pest animal control and the promotion of community awareness, with a view to improving habitat and water quality. Funded by DELWP's Port Phillip Bay Fund.	2017	1
3.3.4 F	2.1, 2.3 & 4.2	Community Weed Alliance of the Dandenongs	Monbulk Creek Community Neighbourhood Program	Water quality along Monbulk Creek in the Dandenong Ranges directly impacts on the health of the Port Phillip Bay through many elements such as sediment, litter, contaminants, weed plant species and pest animals. The Community Weed Alliance of the Dandenongs (CWAD) has been very active in recent years to raise awareness and investment in the management of weed species throughout Yarra and Dandenong Catchments. Success has been achieved through the engagement of landowners through a comprehensive neighbourhood program. CWAD aim to continue this great work to include a section of Monbulk Creek which has over 100 landowners engaged. Funded by DELWP's Port Phillip Bay Fund.	2018	2

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
3.3.4 G	1.2, 2.1, 2.2, 2.3 & 4.2	Conservation Volunteers Australia	Community led foreshore enhancement	To build on the success of the initial Year 1 project which undertook improvements works and identified key focus areas for foreshore rehabilitation at sites surrounding wetlands of international significance. Protection and improvement of foreshore vegetation and water quality through weed management, enhancing species diversity, litter removal, erosion management to improve the health of the Bay. Partnering with land managers and schools to facilitate on ground action led by community members and create community awareness. Funded by DELWP's Port Phillip Bay Fund.	2018	2
3.3.5	3.1 & 3.2	DELWP	Catchment modelling to quantify nutrients under existing and likely future (2030 and 2050) land uses to inform management options	SOURCE catchment modelling to quantify nutrients under existing and likely future (2030 and 2050) land uses to understand potential future impacts and inform management options.	2017	2
4.1.1	1.2, 2.1, 2.3 & 4.2	DELWP	Litter baseline assessment and annual survey program; National Litter Index	The volume of litter within the Bay, including buried in sediments (and on beaches) is knowledge gap as well as the impact of litter on ecological values in the Bay. Working with the Keep Australia Beautiful National Litter Index and Tangaroa Blue Foundation's Australian Marine Debris Initiative, this activity will develop a standardised methodology and an easy to use app to coordinate recording and reporting on litter in the Bay.	2017	2
4.1.2	1.2, 2.1, 2.2, 2.3 & 4.2	Sustainability Victoria (SV)	Litter impact assessment (Research program)	The Microplastics Citizen Science project engages volunteers and scientists in a whole-of-catchment collaborative research project to better understand the sources and impacts of microplastics in Port Phillip Bay and its catchment. This activity will also look in undertaking behavioural/ attitudinal research under the 2018 Victorian Litter Plan.	2018	3
4.1.3	4.3	PV	Yarra River Litter Management programs	In the Yarra River Parks Victoria operate a number of floating litter traps and utilise a litter barge to remove floating materials before these materials enter Port Phillip. Much of the plastic litter that enters the bay comes from terrestrial sources via waterways including rivers and streams. This includes a wide range of materials that remain intact through the delivery pathway such as plastic bags and bottles. Much of the material that is gathered by the barge within the Yarra has its source on urban streets before entering the waterway.	2017	5
4.1.4 A	1.2, 2.1 & 2.2	Port Phillip EcoCentre	Clean Bay Blueprint: litter evidence, proactive education and collaboration	The 'Clean Bay Blueprint' program will build upon previous litter audit programs to build a continuous data set representing the whole of bay catchment area to inform stakeholders and the community about plastic pollution and waterway health. Funded by DELWP's Port Phillip Bay Fund.	2017	3

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
4.1.4 B	2.1 & 2.3	Royal Melbourne Institute of Technology (RMIT) University	The Plastics Lab: Establishing a free plastics identification facility for Port Phillip community groups	Reducing the amount of microplastic reaching the Bay requires identification of the type of plastics found in fragmented litter, to determine original source items. The Plastics Lab at RMIT will provide free services to identify types of plastics collected during community audits of litter in the Bay and catchment waterways, with initial survey partners committed to 10 data points representing catchment to coast. The Plastics Lab will also screen samples for organic chemical pollutants that attach to plastic fragments and increase health risk when ingested by marine wildlife. Data shared will improve source reduction strategies, and risk-assess marine ecological health. Funded by DELWP's Port Phillip Bay Fund.	2018	2
4.2.1	2.1, 2.3 & 4.1	SV	Regional Litter Plans under the 2018 Victorian Litter Plan	This activity is a key project of the 2018 Victorian Litter Plan. The project will assess regional Victoria's litter data to establish key litter issues and targeted actions. The plans will build the capacity and capability of the state and local government, land managers and other stakeholders to address litter and illegal dumping issues.	2017	1
4.2.2	1.2, 2.1, 2.2 & 2.3	SV	Capacity building program	Raising awareness of the resources, toolkits and frameworks such as Victorian Litter Action Alliance community-of-practice to provide support and guidance to litter managers planning and implementing litter related projects.	2018	2
4.2.3 A	1.2, 2.1, 2.2 & 4.3	Yarra Riverkeeper	Litter and flows - connecting the Yarra and the Bay	The Yarra River Catchment runs through the Eastern Suburbs and heart of Melbourne, before ultimately running into Port Phillip Bay at Port Melbourne. The project will activate community groups and key stakeholders undertake litter removal and map the amounts removed with the intent of promoting and educating the community as to the outcomes and how they can assist. Funded by DELWP's Port Phillip Bay Fund.	2017	3
4.2.3 B	1.2, 2.1 & 2.2	Friends of Merri Creek	Rapid response to litter clean-ups after high rainfall	The Merri Creek runs through the North-Eastern Suburbs, before ultimately joining the Yarra River at Yarra Bend. The project will promote the activation of community groups and key stakeholders to undertake rapid response to waterway clean up after a heavy rain or flood event, before plastics disintegrate into pieces too small and fragile to remove. Funded by DELWP's Port Phillip Bay Fund.	2017	3
4.2.3 C	1.2, 2.1, 2.2, 2.3, 3.3 & 4.3	MW	Reducing litter and sediment, and raising awareness in the Tanti Creek catchment	The Tanti Creek enters Port Phillip Bay at Morningside. This project will install a pollutant trap on a major drain entering the creek, which will remove floating and vegetative litter and polluted sediment. Monitoring of other water sources into the creek will identify other locations where it may be beneficial to place a trap. An erosion control structure will also be installed where there is active erosion to reduce sedimentation in the creek and bay. These installations coupled with community activity involving clean-up and education aim to increase amenity. Funded by DELWP's Port Phillip Bay Fund.	2017	3

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
4.2.3 D	1.2, 2.1 & 2.2	Love Our Street	Love Our Street, Creek and Bay - litter reduction program	The Elster Creek Catchment runs through the Inner South-Eastern Suburbs of Melbourne, before ultimately running into Port Phillip Bay. The project will activate community members and ultimately develop groups to undertake litter removal along Elster Creek, improving local amenity and the ecosystem of the Bay and educating the community on the impacts of litter. Funded by DELWP's Port Phillip Bay Fund.	2017	3
4.2.3 E	1.2, 2.1 & 2.2	Fishcare Victoria	Litter Warriors - Protecting our Bay	To deliver incursion and excursion activities directly related to marine litter and their impacts within the bay. Educational resources specific to the impacts of litter in Port Phillip Bay will be developed including props, videos, resource sheets and online learning resources. The resources will be aligned with the Victorian Curriculum and delivered as a part of the Fishcare Program which is administered by Fishcare Volunteers and Staff. Funded by DELWP's Port Phillip Bay Fund.	2018	1
4.2.3 F	1.2, 2.2, 3.3 & 6.3	Friends of Westgate Park	Planting and collecting litter along Yarra close to the Bay using community volunteers	This project along the Yarra River within Westgate Park in Port Melbourne addresses two priorities for Port Phillip Bay: (1) improves coastal health by planting indigenous plants to increase biodiversity, and (2) reduces litter loads to the Bay by regular litter collections and recording of litter. Funded by DELWP's Port Phillip Bay Fund.	2018	1
4.2.4 A	2.1 & 2.2	Seaside Scavenge Chapter Coordinator	Seaside Scavenge Mornington Peninsula	The Mornington Peninsula Seaside Scavenge Chapter launched in January 2016 and has hosted three annual events, where 1,515kg of litter and 20,000+ cigarette butts were removed from Rye beach and parklands by 570 participants, 98% of whom had never previously attended a clean-up event. This grant would enable the Peninsula Chapter to expand annual events to bi-annual events at different locations on the Peninsula, including a Winter Scavenge for Dromana and Safety Beach. The aim of which is to develop the network of organisations on the Peninsula combating marine debris pollution and partner with more businesses to take plastic-free pledges. Funded by DELWP's Coastcare Community Grant.	2018	1
4.2.4 B	1.2, 2.1 & 2.2	Fishcare Victoria	What's Under the Water	This project will replicate an underwater marine experience that demonstrates how litter impacts aquatic animals and habitats, in a pool environment by developing an underwater education pack. The pack includes a suite of Victorian fish species, sea weed and other props and strategically placed rubbish, (particularly soft plastics, straws, fishing line etc.) that clearly demonstrate their impacts on marine environments to be set up in a pool lane. Each participant then uses an underwater slate to record the species and litter sighted. This program would be complimented by an in-class session and a rubbish collection activity. Funded by DELWP's Coastcare Community Grant.	2018	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
4.2.4 C	1.2 & 2.2	Marine Mammal Foundation	Marine Litter Education Project - Empowering Young People, Making A Difference	Litter and marine debris are an identified threat to marine environments and marine mammals, such as the endangered Burruran dolphin. As Victoria's coastal population increases so too does the litter threat to local marine environments. Education has proven to be an effective tool to minimise litter within communities through improving understanding of the link between litter behaviour and the environment. Our project provides interactive school-based education incursions designed to highlight the negative impacts of litter behaviour on marine environments and demonstrate effective strategies to minimise the litter threat through better community appreciation of the importance of coastal health. Funded by DELWP's Coastcare Community Grant.	2018	1
4.3.1	1.3, 2.3 & 4.2	SV	Litter hotspots identified through the National Litter Index	Better knowledge and an accurate baseline litter assessment through a coordinated approach to recording and reporting litter will provide the evidence base for targeting litter reduction activities, setting litter reduction targets and better understand impacts of litter on Bay values.	2017	1
4.3.2	1.2, 1.3, 2.2, 2.3 & 4.2	SV	Projects identified through Regional Litter Plans (2018 Victorian Litter Plan)	This activity will implement projects through grants to target issues identified from the Regional Litter Plans and engage the Victorian community in activities that are targeted, measurable and evidence-based.	2018	4
4.3.3 A	1.3, 2.3 & 4.2	Tangaroa Blue Foundation	Working together to target the source of marine debris & litter	The Tangaroa Blue Foundation has been working with 7 bayside municipalities around Port Phillip Bay to initiate a Source Reduction Plan for litter. This project will allow this organisation to monitor the original seven councils and add an additional 4 municipal areas to the program, therefore linking all the coastal council areas in this project. Funded by DELWP's Port Phillip Bay Fund.	2017	2
4.3.3 B	2.2, 2.3 & 4.2	MW	Working with Waterwatch to develop Community Based Litter Action	The project will utilise existing and new Waterwatch community groups and key stakeholders undertake litter removal and map the inputs into hotspots and priority waterways across Melbourne. These results will then form the basis of Source Reduction Action Plans to achieve a measurable reduction in litter accumulation rates and educating the community on the outcomes and how they can assist. Funded by DELWP's Port Phillip Bay Fund.	2017	1
4.3.3 C	1.2, 2.2, 2.3 & 4.2	Tangaroa Blue Foundation	Engaging community, industry and government to reduce plastic resin pellets flowing into Port Phillip Bay	Plastic resin pellets (nurdles) are pre-production raw plastic, they are lost into the environment through improper handling and spills during manufacturing and transportation. They are a known threat to wildlife through ingestion and have been recorded in significant numbers throughout the Port Phillip Catchment. This project aims to build on the success of the Operation Clean Sweep program that was introduced into Victoria in 2014 by working with community, industry and government to take the next steps in preventative measures that stop plastic resin pellets ending up in Port Phillip Bay. Funded by DELWP's Port Phillip Bay Fund.	2018	2

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
5.1.1	5.3	EPA	Beach and waterway recreational water quality data analysis (continued)	EPA Beach Report and EPA/Melbourne Water Yarra Watch will develop improved end of season reporting to align with new water-based recreation objectives in the draft State Environmental Protection Policy (SEPP) (Waters). This will include adopting the risk-based approach for managing risk to recreational waters.	2019	3
5.1.2	2.3 & 5.3	EPA	Quantitative Microbial Risk Assessments (QMRAs) for marine recreational waters	To indirectly measure, using QMRAs, public health risks to recreational users in the Bay. This involves the monitoring of pathogen concentrations and their potential likelihood of causing illness at Altona, Elwood and Frankston beaches. This study will also be used to improve monitoring design for EPA Beach Report.	2017	1
5.2.1	2.3, 3.2, 5.1 & 5.3	SEW	Drainage pathogen investigation, modelling & risk assessment in Elster Creek, Elwood	This project is using Elster Creek in Melbourne's south-east as a case study to understand the impacts of discharged Emergency Relief Structures on the receiving water quality after rainfall events. Source tracking markers and bacterial analyses are being compared between dry and wet weather samples, while modelling tools are also being employed to estimate the hydraulic conditions and dilutive properties of the receiving stormwater in the absence of sewer overflows.	2017	2
5.2.2	2.3, 3.2 & 5.3	SEW	Trial of Beach Guard method for early detection of sewer spills	South East Water and Monash University have developed the Beach Guard program that will undertake a trial of a total sewer catchment digital hydraulic model system to identify environmental and other impacts in Tanti Creek, Mornington. This project is focused on, early detection of sewer spills and leaks; source tracking of contaminants for more accurate resolution of contamination; reviewing of the performance of various probes (sensitivity, reliability, cost-benefit, effectiveness); and ongoing real-time monitoring of waterway health.	2017	2
5.3.1	1.3, 2.1 & 2.3	EPA	Improve Beach Report and Yarra Watch communication	Continued activities by EPA Beach Report and EPA/Melbourne Water Yarra Watch to improve communication and promotion of programs. These activities will help to increase awareness and influence behaviour change.	2017	5
5.3.2	1.2, 1.3, 2.1, 2.2 & 5.3	EPA	Swimsafe: Citizen science and sensors to protect Bay beaches	This project will work with the community, Water corporations, councils, Port Phillip EcoCentre and researchers. Sensors will be used to determine if there are dry weather flows from stormwater drains at ten beaches; their risk to recreational water quality; and source track flows that are assessed as a risk. Funded by DELWP's Port Phillip Bay Fund.	2018	2

MARINE LIFE – Habitat & marine life and Marine biosecurity

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
6.1.1	2.3 & 6.2	DELWP	Review habitat monitoring & mapping programs	To better understand the spatial distribution of habitats particularly sub-tidal reefs and develop a 'single' state-wide hierarchical marine habitat classification data set that can accessed through a website (CoastKit and Combined Biotope Classification Scheme - CBiCS) and will help to inform policy, planning and management of the marine environment.	2017	1
6.1.2	2.1, 2.3, 6.2 & 7.1	PV	Implement a targeted monitoring program for the MPAs	To continue the extensive monitoring program across the network of Marine Protected Areas as part of the Signs of Healthy Parks Program (SHP). The SHP program provides a stronger evidence base to better inform management decisions. Building on Parks Victoria's Adaptive Management Framework, the SHP program monitors the health of the parks (including those in the Bay) using a range of environmental indicators that provide information about the natural assets and ecological processes as well as effects of threats and other drivers. Monitoring surveys have and are being implemented in all marine national parks and sanctuaries in the Bay, the collection of baseline biological information will be used to understand long-term changes in populations, abundances, community structures and ecological processes.	2017	5
6.1.3 A	1.2, 2.1, 2.2, 2.3 & 6.2	VNPA	Strengthening ReefWatch - communities monitoring the health of the Bay	ReefWatch is a citizen science program that develops and runs projects that engage, educate and equip community volunteers to record and report marine life across Victoria. ReefWatch is run by the VNPA, in partnership with Museums Victoria. ReefWatch will be strengthened to monitor the health of Port Phillip Bay. It will do this by bringing together community groups, scientists and marine managers to develop new monitoring tools and methods and engaging, educating and equipping volunteers to learn about and monitor marine life utilising these tools. Funded by DELWP's Port Phillip Bay Fund.	2017	3
6.1.3 B	1.2, 2.1 & 2.2	Jawbone Marine Sanctuary Care	Jawbone Marine Sanctuary seagrass ecosystem inventory	To improve knowledge of macrofauna in local seagrass beds, we will conduct a beam trawl at Seaholme - a suitable location near but not within the marine sanctuary. Collected samples will be sorted by community members with supervision. An inventory of the macroinvertebrates that live in seagrass will be made. Posters and a community education campaign will be developed with this information. The results of the first sampling of invertebrates may be used as a monitoring tool for further sampling in later years. Funded by DELWP's Port Phillip Bay Fund.	2018	1

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
6.1.3 C	1.2, 2.1, 2.2 & 6.2	The Nature Conservancy (TNC)	OysterWatch - Enabling the community to engage in shellfish reef restoration	The distribution of native oysters and mussels in Port Phillip Bay is largely unknown. Both species form reef ecosystems, which once covered up to half of the Bay's seafloor. Over the last two years, The Nature Conservancy and Victorian National Parks Association have been trialling a citizen scientist project called OysterWatch, to test the community's capacity to gather information on shellfish distribution and reproduction. With further financial assistance the project will expand to include new audiences, sites and assessment methods, enabling the development of a 'hot spot' map of sites where future shellfish reef restoration could be prioritized. Funded by DELWP's Port Phillip Bay Fund.	2017	2
6.1.3 D	2.1, 2.3, 6.2 & 7.1	Reef Life Survey	Beneath the Bay	This project will enhance a working partnership between key members of the Victorian recreational SCUBA diving community, through the Reef Life Survey program, and Parks Victoria by continuing vital long-term monitoring of Port Phillip Bay marine life, including Marine National Parks and Sanctuaries, and training divers in biodiversity survey methods. Volunteer divers will be directed/resourced to fill gaps in the Victorian Sub-tidal Reef Monitoring Program; contributing to the State of the Marine and Coastal Environment report (replaces the State of the Bays reporting) and to the management of the Bay's marine biodiversity. The project will contribute to the RLS database; providing a publicly-accessible high-quality comprehensive resource on national marine biodiversity. Funded by DELWP's Port Phillip Bay Fund.	2018	2
6.1.4	1.2, 2.1, 2.2 & 2.3	VNPA	Great Victorian Fish Count	The VNPA is a non-profit organisation that runs the Reef Watch program. ReefWatch coordinates several marine conservation projects including the Great Victorian Fish Count which has been running for 12 years and is a major community event. It's the largest marine citizen science event in Victoria, engaging hundreds of divers and snorkelers to record fish sightings resulting in a large collection of data which is shared via websites, social and traditional media. This funding will help fund the Coordinator role which is crucial to ensure the smooth delivery of this large event over many different sites. Funded by DELWP's Coastcare Community Grant.	2018	1
6.2.1	1.3, 2.3, 6.1 & 7.2	DELWP	Establish a marine knowledge framework, to include a coordinated marine research program	To develop a Marine Knowledge Framework to improve understanding of ecological processes, threats and pressures. The framework will coordinate and integrate marine research into one database system to ensure science directs and can monitor sustainable management priorities driven by policy.	2017	2

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
6.2.2	1.2, 2.1, 3.1 & 3.3	National Centre for Coasts and Climate (NCCC), The University of Melbourne	Managing nitrogen loads in Port Phillip Bay: towards better water quality	Excess nitrogen causes algal blooms and can over stimulate growth of other marine plants. This project will quantify nutrient sources in the west of the Bay through partnering with community groups and government bodies to take water samples and comparing these to determine the amount of nitrogen in the water and its sources. It will also determine the effect of these nutrients on drift algae production and the cost-benefit of harvesting algae to manage excess nitrogen. Funded by DELWP's Port Phillip Bay Fund.	2017	3
6.3.1	2.3, 6.1 & 6.2	TNC	Shellfish reef restoration & supporting research	TNC Australia, in partnership with the Victorian Government and the Albert Park Yachting and Angling Club, have been working towards a long-term vision of restoring Port Phillip Bay's lost shellfish reefs. An initial feasibility and site assessment study was conducted by Fisheries Victoria (2013-2014) and a restoration experiment was undertaken to help determine optimal restoration methods and a medium-scale (4 x 200m ² reefs) reef restoration was deployed. The project will extend reef restoration with a focus on trialling the use of recycled shell cultch as the primary reef base in combination with limestone rubble where appropriate onto which to deploy oysters and mussels. Funded by DELWP's Biodiversity Response Planning Marine Environment Targeted Actions initiative.	2017	2
6.3.2 A	2.3 6.2 & 7.1	NCCC, The University of Melbourne	Living breakwater project - from grey to green: nature-based solutions for coastal protection	This project will look at innovative ways to protect the coastline around Geelong and Bellarine Peninsula by developing a living breakwater which is a step away from the traditional engineered sea walls and breakwaters. This will involve the rehabilitation and planting of dunes to stabilise these against storms and rising sea levels. Funded by DELWP's Port Phillip Bay Fund.	2017	3
6.3.2 B	2.3, 6.1, 6.2 & 7.1	NCCC, The University of Melbourne	Restoring healthy ecosystems on subtidal reefs: an integrated approach	There are a number of reefs in Port Phillip Bay that have become damaged over time by the over growth of native purple sea urchin. The over-population has resulted in a decline of other marine plants and animals including seaweeds which form habitats and kelp which is used to filter the water. The NCCC through this project will remove some colonies of urchin and trial some new techniques to allow for the reforestation of marine plants into these temperate reefs to improve how the reefs function. It will also include some research into the urchins to better understand their population explosion. Funded by DELWP's Port Phillip Bay Fund.	2017	3

Activity	Relevant actions	Strategic lead	Activity title	Project summary	Year	Duration
6.3.3	1.1, 1.2, 2.3 & 6.2	NCCC, The University of Melbourne	Optimal management of overabundant sea urchins in Victoria	This project is a partnership between University of Melbourne, Deakin University and Parks Victoria. This project will collate information on urchin biomass hotspots and the scale of barrens state-wide, using this information to inform population dynamics models of purple and black-spined urchins to identify sources and dispersal/invasion pathways. Standard methods for culling and monitoring will be developed and implemented in a culling program. Marine Protected areas prioritised for culling in Port Phillip Bay are Point Cooke, Jawbone, and Ricketts Point. Funded by DELWP's Biodiversity Response Planning Marine Environment Targeted Actions initiative.	2018	3
7.1.1	7.3	Department of Economic Development, Jobs, Transport and Resources (DEDJTR), Biosecurity	Training, assessment and community-based partnership to manage new incursions and spread of existing species	To develop guidelines and training to better approach the following; identifying pathways for transfer and spread of marine pests and check that mitigation measures are in place to prevent introduction and dispersal of marine pests; develop a Victorian approach to in-water cleaning; and develop guidelines for monitoring and management of risks associated with marine pests that can be followed by port managers, shipping companies, fishing and aquaculture industries, and other stakeholders.	2017	3
7.1.2	1.2, 1.3, 2.1, 2.2, 6.3 & 7.3	PV	Marine pest initiative within MPAs	PV seek to prevent the spread of marine pests from areas of the bay where they are well established to marine protected areas, and other parts of Victoria, through engagement with key stakeholder groups such as the boating community. Increasing awareness of marine pests and their impacts, promoting good boating hygiene and practices effective in preventing pest spread, and reporting pests that are new or outside previous ranges, all contribute to this initiative.	2017	1
7.2.1	6.2 & 7.1	DEDJTR, Biosecurity	Marine pest monitoring program	To design an integrated monitoring and surveillance program, confirm procedures and establish partnerships with relevant stakeholders. Once established the intention is to coordinate monitoring and surveillance, collect data and report including maintaining online recording and reporting systems.	2017	5
7.2.2	1.2, 1.3, 2.1, 2.2, 6.2 & 7.3	PV	Marine pest monitoring and response program in MPAs	Monitoring of animals and plants within the bays marine protected areas is regularly undertaken with observations of marine invasive species a priority, Formal scientific monitoring is complemented by citizen science programs including Parks Victoria's Sea Search program which can provide early detection of marine pests, and where possible allows management to prevent them becoming established.	2017	5
7.3.1	1.3, 2.1, 2.3, 6.3 & 7.1	DEDJTR, Biosecurity	Review marine pest response arrangements	To review current procedures and operational capacity including training requirements for responding to marine pest incursions. The activity will also identify and document roles and responsibilities and improve communication involving updating websites and publishing revised procedures.	2017	2

6.2 Appendix 2: Glossary of acronyms

ACR	Avalon Coastal Reserve
AWARE	Australian Wildlife Assistance, Rescue and Education
BCN	Bellarine Catchment Network
BERG Mt Martha	Balcombe Estuary Reserves Group Mt Martha
BPEM	Best Practice Environmental Management
CALD	Culturally And Linguistically Diverse
CBiCS	Combined Biotope Classification Scheme
CES	Commissioner for Environmental Sustainability
CFOB	Caring For Our Bays
CMAs	Catchment Management Authorities
CWAD	Community Weed Alliance of the Dandenongs
DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DELWP	Department of Environment, Land, Water & Planning
DRI	Dolphin Research Institute
EMP	Environmental Management Plan
EPA	Environment Protection Authority
IWM	Integrated Water Management
MCC	Marine and Coastal Council
MCRP	Marine Care Ricketts Point
MEAFEC	Mount Eliza Association For Environmental Care
MERI	Monitoring, Evaluation, Reporting & Improvement
MESAC	Marine Education Science And Community
MPAs	Marine Protected Areas

MPNP	Mornington Peninsula National Park
MW	Melbourne Water
NCCC	National Centre for Coasts and Climate
NGOs	Non-Government Organisations
PPHMNP	Port Phillip Heads Marine National Park
PPWCMA	Port Phillip and Westernport Catchment Management Authority
PV	Parks Victoria
QMRAs	Quantitative Microbial Risk Assessments
RAPs	Registered Aboriginal Parties
RCP	Red-Capped Plover
RMIT	Royal Melbourne Institute of Technology
SEPP	State Environment Protection Policy
SEW	South East Water
SHP	Signs of Healthy Parks
SV	Sustainability Victoria
TNC	The Nature Conservancy
TO group	Traditional Owner group
VEAC	Victorian Environmental Assessment Council
VFA	Victorian Fisheries Authority
VNPA	Victorian National Parks Association
VPA	Victorian Planning Authority
WTP	Western Treatment Plant

