



# Integrated Monitoring and Evaluation Framework for the Marine Integrated Monitoring Program

A Live Framework prepared for NSW Department of Primary Industries and Environment

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This Monitoring and Evaluation Framework was originally prepared in 2019, and was led by the project coordinators, Natalie Gollan and Belinda Curley (NSW Department of Primary Industries – Fisheries).

The collaborative approach was facilitated by Aither, and included representatives from the following organisations:

- Local Land Services
- Marine Estate Expert Knowledge Panel
- NSW Department of Primary Industries - Fisheries
- NSW Environment Protection Authority
- Office of Environment and Heritage, now Environment and Heritage within Department of Planning and Environment (DPE)
- Transport for New South Wales

A full list of contributing staff is provided in Appendix D.

The Monitoring and Evaluation Framework was updated in 2021 to reflect insights from the first two years of implementing, and monitoring and evaluating the Marine Estate Management Strategy (MEMS). Aither facilitated the process to update the Monitoring and Evaluation Framework with MEMS initiative leads and other selected MEMS delivery staff.

# Contents

---

Executive Summary .....	vii
Introduction .....	vii
The purpose of the MIMP .....	vii
Framework overview .....	vii
Applying the Monitoring and Evaluation Framework .....	ix
Reviewing the Monitoring and Evaluation Framework .....	x
Importance of the Monitoring and Evaluation Framework .....	x
1. Introduction .....	1
2. Marine Estate Management Strategy .....	3
3. Monitoring and Evaluation Framework overview .....	4
3.1. Summary .....	4
3.2. Program logic .....	5
3.3. Monitoring .....	11
3.4. Evaluation .....	14
3.5. Reporting .....	16
4. Applying the Monitoring and Evaluation Framework .....	20
4.1. Summary .....	20
4.2. Monitoring .....	20
4.3. Evaluation .....	37
4.4. Reporting .....	46
5. Benefit Realisation .....	49
6. Reviewing the Monitoring and Evaluation Framework .....	51
References .....	52
Appendix A – Initiative monitoring plans .....	54
Initiative 1 - Improving water quality and reducing litter .....	55
Initiative 2 - Delivering healthy coastal habitats with sustainable use and development .....	73
Initiative 3 – Planning for climate change .....	82
Initiative 4 – Protecting the Aboriginal cultural values of the marine estate .....	85
Initiative 5 – Reducing impacts on threatened and protected species .....	95
Initiative 6 – Ensuring sustainable fishing and aquaculture .....	103
Initiative 7 – Enabling safe and sustainable boating .....	113
Initiative 8 – Enhancing social, cultural and economic benefits .....	118

Initiative 9 – Delivering effective governance.....	126
All indicators.....	134
<b>Appendix B – Data collection and management plan.....</b>	<b>203</b>
Data collection and sources for monitoring management action status.....	203
Data collection and sources for monitoring indicators.....	203
Data collection and sources for evaluation.....	205
Data management.....	210
<b>Appendix C – Alignment of outcomes and benefits.....</b>	<b>215</b>
Communities.....	216
Aboriginal People.....	220
Landowners: Rural and Urban.....	223
Fisheries and aquaculturalists.....	226
Tourists and tour operators.....	228
Boat users.....	231
<b>Appendix D – Framework contributors.....</b>	<b>233</b>
<b>Tables</b>	
Table 1 Identified audiences and key messages for the MIMP report card.....	18
Table 2 Program delivery status definitions.....	21
Table 3 Summary of indicators with data collection via survey.....	23
Table 4 Key evaluation questions and rationale - <i>context and basis</i> .....	39
Table 5 Key evaluation questions and rationale - <i>process and evaluation</i> .....	39
Table 6 Key evaluation questions and rationale - <i>outcome evaluation</i> .....	40
Table 7 Key evaluation questions and rationale - <i>economic evaluation</i> .....	42
Table 8 Evaluation method.....	44
Table 9 Summary of evaluation reporting requirements.....	46
Table 10 Key evaluation questions and rationale to inform review of this Framework.....	51
Table 11 Indicators and associated details for short-term outcomes for Initiative 1.....	57
Table 12 Indicators and associated details for intermediate outcomes for Initiative 1.....	61
Table 13 Indicators and associated details for long-term outcomes for Initiative 1.....	67
Table 14 Indicators and associated details for short-term outcomes for Initiative 2.....	75
Table 15 Indicators and associated details for intermediate outcomes for Initiative 2.....	77
Table 16 Indicators and associated details for long-term outcomes for Initiative 2.....	79
Table 17 Indicators and associated details for short-term outcomes relating to research and monitoring components of Initiative 3.....	83

Table 18 Indicators and associated details for intermediate outcomes relating to research and monitoring components of Initiative 3 .....	83
Table 19 Indicators and associated details for long-term outcomes relating to research and monitoring components of Initiative 3 .....	83
Table 20 Indicators and associated details for short-term outcomes for Initiative 4 .....	87
Table 21 Indicators and associated details for intermediate outcomes for Initiative 4.....	87
Table 22 Indicators and associated details for long-term outcomes for Initiative 4.....	93
Table 23 Indicators and associated details for short-term outcomes for Initiative 5 .....	97
Table 24 Indicators and associated details for intermediate outcomes for Initiative 5.....	99
Table 25 Indicators and associated details for long-term outcomes for Initiative 5.....	101
Table 26 Indicators and associated details for short-term outcomes for Initiative 6 .....	105
Table 27 Indicators and associated details for intermediate outcomes for Initiative 6.....	109
Table 28 Indicators and associated details for long-term outcomes for Initiative 6.....	111
Table 29 Indicators and associated details for short-term outcomes for Initiative 7 .....	115
Table 30 Indicators and associated details for intermediate outcomes for Initiative 7.....	115
Table 31 Indicators and associated details for long-term outcomes for Initiative 7.....	117
Table 32 Indicators and associated details for short-term outcomes for Initiative 8 .....	120
Table 33 Indicators and associated details for intermediate outcomes for Initiative 8.....	122
Table 34 Indicators and associated details for long-term outcomes for Initiative 8.....	124
Table 35 Indicators and associated details for short-term outcomes for Initiative 9 .....	128
Table 36 Indicators and associated details for intermediate outcomes for Initiative 9.....	129
Table 37 Indicators and associated details for long-term outcomes for Initiative 9.....	132
Table 38 Likert scale to be used in surveys to assess satisfaction.....	205
Table 39 Data requirements, collection and sources for evaluation questions .....	206
Table 40 NSW Information Management principles .....	210
Table 41 Open data principles .....	212
Table 42 Other relevant data management policies.....	213

## Figures

Figure 1 Summary of the main components of the Monitoring and Evaluation Framework.....	ix
Figure 2 Summary of main components of the Monitoring and Evaluation Framework .....	5
Figure 3 Program logic structure, terms and definitions.....	7
Figure 4 Overarching program logic developed for the Marine Estate Management Strategy.....	9
Figure 5 Types of indicators.....	12
Figure 6 Evaluation types and alignment with main components of the program logics .....	15
Figure 7 KPIs aligned with overarching MEMS outcomes .....	35

Figure 8 Critical elements and draft structure for the report card .....	48
Figure 9 Stakeholder benefits identified in the business case .....	50
Figure 10 Program logic for Initiative 1 .....	55
Figure 11 Action - outcome map for Initiative 1.....	56
Figure 12 Program logic for Initiative 2 .....	73
Figure 13 Action – outcome mapping for Initiative 2 .....	74
Figure 14 Program logic for Initiative 3 .....	82
Figure 15 Program logic for Initiative 4 .....	85
Figure 16 Action – outcome mapping for Initiative 4 .....	86
Figure 17 Program logic for Initiative 5 .....	95
Figure 18 Action – outcome map for Initiative 5 .....	96
Figure 19 Program logic for Initiative 6 .....	103
Figure 20 Action – outcome map for Initiative 6 .....	104
Figure 21 Program logic for Initiative 7 .....	113
Figure 22 Action- outcome map for Initiative 7 .....	114
Figure 23 Program logic for Initiative 8 .....	118
Figure 24 Action – outcome map for Initiative 8 .....	119
Figure 25 Program logic for Initiative 9 .....	126
Figure 26 Action – outcome map for Initiative 9 .....	127

## Abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
AIATSIS	Australian Indigenous Australian and Torres Strait Islander Studies
CMP	Coastal Management Program
DPI	Department of Primary Industries
DPI-F	Department of Primary Industries - Fisheries
DPE	Department of Planning and Environment
DPE-EHG / EHG	Department of Planning and Environment – Environment and Heritage
DPE-P	Department of Planning and Environment – Planning
FRDC	Australian Fisheries Research and Development Corporation
FRDC	Australian Fisheries Research and Development Corporation
GERAIS	Guidelines for Ethical Research in Australian Indigenous Studies
IMF	Information Management Framework
KEQ	Key Evaluation Question
KPI	Key Performance Indicator
LGA	Local Government Area
LI	Leading Indicator
MEEKP	Marine Estate Expert Knowledge Panel
MEMA	Marine Estate Management Authority
MEMS	Marine Estate Management Strategy
MIMP	Marine Integrated Monitoring Program
NSW	New South Wales
OEH	Office of Environment and Heritage (now EHG, see above)
SMART	Specific, Measurable, Achievable, Realistic, Timely
TARA	Threat and Risk Assessment
TfNSW	Transport for New South Wales

# Executive Summary

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## Introduction

This Monitoring and Evaluation Framework guides monitoring and assessment of progress in delivering the New South Wales' (NSW) Marine Estate Management Strategy (MEMS). It was originally prepared in 2019 and was updated in 2021 to reflect insights from the first two years of implementing the MEMS and from monitoring and evaluating progress.

The marine estate is one of NSW's most significant natural assets. The NSW community derives social, cultural, and economic value from the marine estate. These values are underpinned by good water quality, healthy habitats and diverse and abundant marine life. The Marine Estate Management Authority (MEMA) released the MEMS in 2018. The MEMS provides a ten-year, overarching framework for coordinated management of the marine estate to deliver its vision for '*a healthy coast and sea, managed for the greatest well-being of the community, now and into the future*'. It sets out management objectives and a series of management actions across nine initiatives to achieve the vision. Progress towards implementing the MEMS and delivering the vision is measured and reported through the Marine Integrated Monitoring Program (MIMP).

## The purpose of the MIMP

The MIMP has three key purposes:

1. monitor the condition and trend of environmental assets and community benefits to inform a five-year health check
2. evaluate the effectiveness of management initiatives and actions that aim to reduce priority threats and risks
3. fill knowledge gaps that were identified as part of the state-wide TARA process.

This high-level Monitoring and Evaluation Framework focusses on the second purpose, to *evaluate the effectiveness of management initiatives and actions that aim to reduce priority threats and risks*. The other two purposes will be developed and documented through another process, however, given the interface between all three, this Framework will include summaries of purpose 1 and 3 where relevant.

This Monitoring and Evaluation Framework integrates environmental, social, cultural and economic components, as well as threats and stressors, to measure and demonstrate progress of the MEMS. The framework was developed collaboratively with representatives from each of MEMA agencies and the Marine Estate Expert Knowledge Panel (MEEKP).

## Framework overview

This high-level framework has four main components:

- **Program logics**, which articulate the rationale, management actions and desired short-term, intermediate and long-term outcomes for each initiative, as well as the overarching MEMS. The program logics provide the basis for measuring progress and evaluating success.

- **Monitoring** to track management action delivery and give an indication of progress towards achieving outcomes. Monitoring helps track progress and identify trends and risks early so that you can adjust delivery, if required.
- **Evaluation** after two years, five years and 10 years to periodically assess achievement of outcomes and overall success, and to identify areas that may require further attention to ensure future success. Evaluation consists of process evaluation, outcomes evaluation and economic evaluation to assess overall appropriateness, efficiency, effectiveness and sustainability of the MEMS and initiatives, and to provide insights for continuous improvement.
- **Reporting** to share progress, insights and information with the community, responsible agencies and decision-makers, and to celebrate achievements. Reporting also encourages community awareness of and interest in the marine estate, and accountability and transparency among marine estate managers.

These components are shown conceptually below (Figure 1).

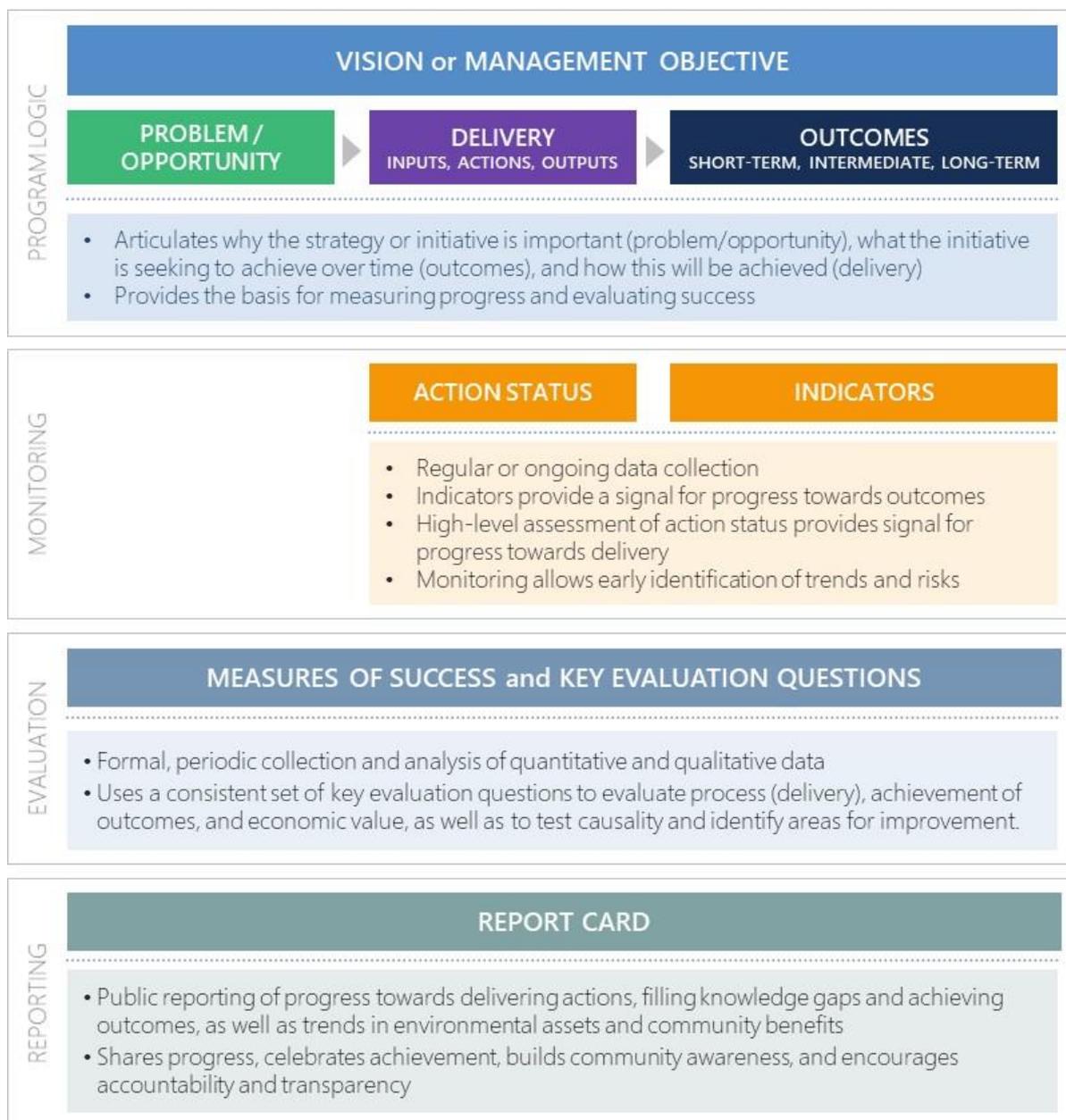


Figure 1 Summary of the main components of the Monitoring and Evaluation Framework

## Applying the Monitoring and Evaluation Framework

The high-level Framework focuses on establishing monitoring and providing guidance for evaluation of the overall MEMS and each management initiative. It sets out an approach for assessing progress against outcomes that management actions are expected to collectively achieve. It recognises that the management initiatives and actions are inherently interrelated, with individual actions often contributing to multiple outcomes within and across initiatives.

The Monitoring and Evaluation Framework is intended for use by MIMP staff, initiative leads and external evaluators. It will guide monitoring, evaluation and reporting activities over the life of the MEMS. The high-level Framework sets out:

- indicators to use as representative measures for monitoring progress against outcomes

- key evaluation questions to guide periodic evaluation of processes, outcomes and economic value
- a draft structure for a public report card.

This is supported by detailed monitoring requirements for each initiative, and a data collection and management plan, which includes what data should be collected and at what frequency.

While the Monitoring and Evaluation Framework does not focus on individual management actions, delivery staff may apply a similar approach to designing and undertaking monitoring and evaluation for individual management actions. Action-level monitoring and evaluation will be important for understanding causality, and whether the current suite of management actions remain the most appropriate for achieving outcomes. It will also provide insights to inform evaluation of the overall MEMS.

## Reviewing the Monitoring and Evaluation Framework

Initiative leads and MIMP staff will continue to identify, develop and refine some details of the Monitoring and Evaluation Framework. Relevant areas for possible refinement are identified in the Monitoring and Evaluation Framework.

The framework will be reviewed periodically as part of the evaluation process and updated, if required, to ensure it remains appropriate and practical. The first review was undertaken in 2021 following the first evaluation. The review focused on refining outcomes, indicators and measures to reflect insights gained through the first two years of implementing the MEMS and the Monitoring and Evaluation Framework. These refinements primarily related to:

- Improving the alignment of outcomes with the intent and scope of the initiative.
- Adjustments to timelines for outcomes to reflect reduced or delayed funding, delays to implementing actions due to external factors, or new insights into the suitability of original timeframes.
- Data collection being more difficult than expected.
- Ability to identify an alternative indicator or measure that aligned more closely with the outcome.
- Concerns over the extent to which external influences may affect results.

## Importance of the Monitoring and Evaluation Framework

The vision and management objectives of the MEMS sets out the overarching strategic direction for the NSW marine estate. The MEMS also outlines a series of clear management actions that align with that direction. The Monitoring and Evaluation Framework will be critical to effectively and efficiently deliver those management actions and achieve the strategic direction.

The Monitoring and Evaluation Framework further clarifies and promotes a shared understanding among responsible agencies of the purpose of the MEMS and the value of undertaking the management actions. It contains short-term, intermediate, and long-term outcomes that articulate the theory of change that connects the management actions to the objectives of each initiative and the overarching MEMS. In doing so, it also identifies opportunities for integration and coordination between initiatives and responsible agencies, driving consistency and efficiency both in delivery of the MEMS and in implementation of the Monitoring and Evaluation Framework.

The Monitoring and Evaluation Framework will enable and drive adaptive management of the marine estate. Adaptive management is fundamental to making progress in complex systems. The Framework supports continuous improvement through systematic monitoring and evaluation of outcomes. This allows managers to build evidence over time of what's working, what's not working, and how external factors may be affecting implementation. These insights allow managers to make adjustments to ensure success and identify where their effort is creating the greatest benefit, so that they can prioritise resources accordingly and ensure efficient and effective management.

The Monitoring and Evaluation Framework will support MEMA agencies in preparing business cases for ongoing funding for management of the marine estate. In the first instance, it allows MEMA to demonstrate it has a clear and robust method for measuring progress and associated outcomes and objectives sought through the MEMS. As the Framework is implemented, the findings will allow MEMA to demonstrate progress and report on early successes and insights. This builds confidence in MEMA's and responsible agencies' approach to managing the marine estate and demonstrates expected outcomes that could be achieved with further funding.

The Monitoring and Evaluation Framework also drives transparency and accountability in the management of the marine estate for the NSW community. It allows MEMA, responsible agencies and relevant Ministers to report on progress, successes, and areas that may need further attention. This gives the community confidence in management of the marine estate.

# 1. Introduction

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The marine estate is one of the most significant natural assets New South Wales (NSW). It comprises tidal rivers and estuaries, the shoreline, submerged lands, offshore islands, and the waters of the NSW coast from the Queensland border to the Victorian border and out to three nautical miles offshore (NSW Marine Estate Management Authority, 2018). The NSW community derives social, cultural, and economic benefits from the marine estate, which are underpinned by good water quality, healthy habitats and diverse and abundant marine life.

The Marine Estate Management Authority (MEMA) was established in 2013 and brings together the heads of the four NSW Government agencies with key marine estate responsibilities. It advises the NSW Government on policies, priorities and the direction of management of the marine estate. In 2018, MEMA released the Marine Estate Management Strategy (MEMS).

The MEMS provides the overarching framework for coordinated management of the marine estate to deliver its vision for *'a healthy coast and sea, managed for the greatest well-being of the community, now and into the future'* and to implement reforms to the way the marine estate is managed. It sets out management objectives and a series of management actions across nine initiatives that are intended to contribute towards achieving the vision. The need for reforms in order to achieve the vision was identified through the evidence based statewide Threat and Risk Assessment (TARA) (NSW Marine Estate Management Authority, 2017). Government intervention is required to address market failures in management of the marine estate, including externalities, resource use-conflict, under investment in value-creation opportunities, imperfect information, and opportunity for greater government coordination and consolidation. The MEMS is a requirement of the Marine Estate Management Act 2014 and is the mechanism to address market failure and deliver the coordinated, holistic, triple bottom-line approach to the management of the NSW marine estate.

Progress towards implementing the MEMS and delivering the vision will be measured and reported through the Marine Integrated Monitoring Program (MIMP).

The MIMP has three key purposes to:

- monitor the condition and trend of environmental assets and community benefits to inform a five-year health check
- evaluate the effectiveness of management initiatives and actions that aim to reduce priority threats and risks
- fill knowledge gaps that were identified as part of the state-wide TARA process.

The Monitoring and Evaluation Framework (this document) focusses on the second purpose, to evaluate the effectiveness of management initiatives and actions that aim to reduce priority threats and risks. The other two purposes will be developed and documented through another process, however, given the interface between all three, this Framework includes summaries of purpose 1 and 3 where relevant.

The Monitoring and Evaluation Framework was developed in collaboration with representatives from each of the MEMA agencies and the Marine Estate Expert Knowledge Panel (MEEKP). It uses a program logic approach that integrates environmental, social, cultural and economic components as the basis against which to measure progress and demonstrate success in achieving the desired MEMS

outcomes, and to identify areas that may require further attention. It is a high-level Framework, and is also designed to:

- drive efficient and effective management of the marine estate by:
  - recognising the inherent inter-relationships between the nine management initiatives and facilitate coordination and efficiency across the initiatives and responsible agencies,
  - enabling and driving adaptive management of the marine estate,
  - enabling responsible agencies to identify where resources are having the greatest benefit, allowing resources to be prioritised accordingly
- drive transparency and accountability in the management of the marine estate for the NSW community.
- provide a practical approach for measuring and progress and evaluating success.
- support bids for ongoing funding for management of the NSW marine estate.

The Monitoring and Evaluation Framework contains the following sections:

- **Section 1: Introduction (this section)** – introduces the Monitoring and Evaluation Framework and provides a brief overview of this document and its purpose
- **Section 3: Marine Estate Management Strategy** – provides background on the MEMS, including its vision and management initiatives.
- **Section 4: Monitoring and Evaluation Framework overview** – introduces the conceptual approach that underpins the Framework.
- **Section 4: Applying the Monitoring and Evaluation Framework** – provides guidance for MIMP staff, initiative leads, other relevant agency staff and a third-party evaluator for applying the Framework.
- **Section 6: Reviewing the Monitoring and Evaluation Framework** – provides an overview of when and how the Framework will be reviewed
- **Appendix A** – provides program logic and monitoring plan for each initiative. Appendix A should be read in conjunction with sections 3 and 4 and Appendix B.
- **Appendix B** – provides the data collection and management plan that will guide monitoring and evaluation activities within the framework. This includes data collection and sources for monitoring management action status and indicators, and for undertaking periodic evaluation. Appendix B should be read in conjunction with Section 4 and Appendix A.
- **Appendix C** – Documents how the outcomes identified in the program logics (Appendix B) align with the suite of broader benefits identified in the original business case for preparing the MEMS.
- **Appendix D** – acknowledges the contribution of those who provided input into preparing the original Monitoring and Evaluation Framework in 2018-19.

## 2. Marine Estate Management Strategy

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The Marine Estate Management Authority (MEMA) released the [Marine Estate Management Strategy \(MEMS\)](#) in 2018. The MEMS is a ten-year strategy and provides the overarching framework for coordinated management of the NSW marine estate. It outlines nine management initiatives designed to address priority threats to the marine estate. These threats were identified through an evidence-based threat and risk assessment for the NSW marine estate ([state-wide TARA](#)) (NSW Marine Estate Management Authority, 2017). The management initiatives summarise management objectives, benefits, threats, stressors and proposed management actions. The nine management initiatives are:

1. Improving water quality and reducing litter
2. Delivering healthy coastal habitats with sustainable use and development
3. Planning for climate change
4. Protecting the Aboriginal cultural values of the marine estate
5. Reducing impacts on threatened and protected species
6. Ensuring sustainable fishing and aquaculture
7. Enabling safe and sustainable boating
8. Enhancing social, cultural and economic benefits
9. Delivering effective governance.

The MEMS also outlines high-level roles and responsibilities for each of the Government agencies involved in managing the marine estate.

Implementation of the MEMS is guided by an Implementation Plan (drafting note: weblink to be inserted when available), which further articulates the management actions and sub-actions that will address priority threats, as well as timeframes and responsibilities for delivery. Progress towards delivering the MEMS and achieving success for each management initiative will be measured and reported through the Marine Integrated Monitoring Program (MIMP).

## 3. Monitoring and Evaluation Framework overview

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### 3.1. Summary

The Monitoring and Evaluation Framework has four main components:

- **Program logics**, which articulate the rationale, management actions and desired short-term, intermediate and long-term outcomes for each initiative, as well as the overarching MEMS. The program logics provide the basis for measuring progress and evaluating success.
- **Monitoring** to track management action delivery and give an indication of progress towards achieving outcomes. Monitoring helps track progress and identify trends and risks early so that you can adjust delivery, if required.
- **Evaluation** after two years, five years and 10 years to periodically assess achievement of outcomes and overall success, and to identify areas that may require further attention to ensure future success. Evaluation consists of process evaluation, outcomes evaluation and economic evaluation to assess overall appropriateness, efficiency, effectiveness and sustainability of the MEMS and initiatives, and to provide insights for continuous improvement.
- **Reporting** to share progress, insights and information with the community, responsible agencies and decision-makers, and to celebrate achievements. Reporting also encourages community awareness of and interest in the marine estate, and accountability and transparency among marine estate managers.

These components are shown conceptually below (Figure 2) and are described in more detail in the following sections.

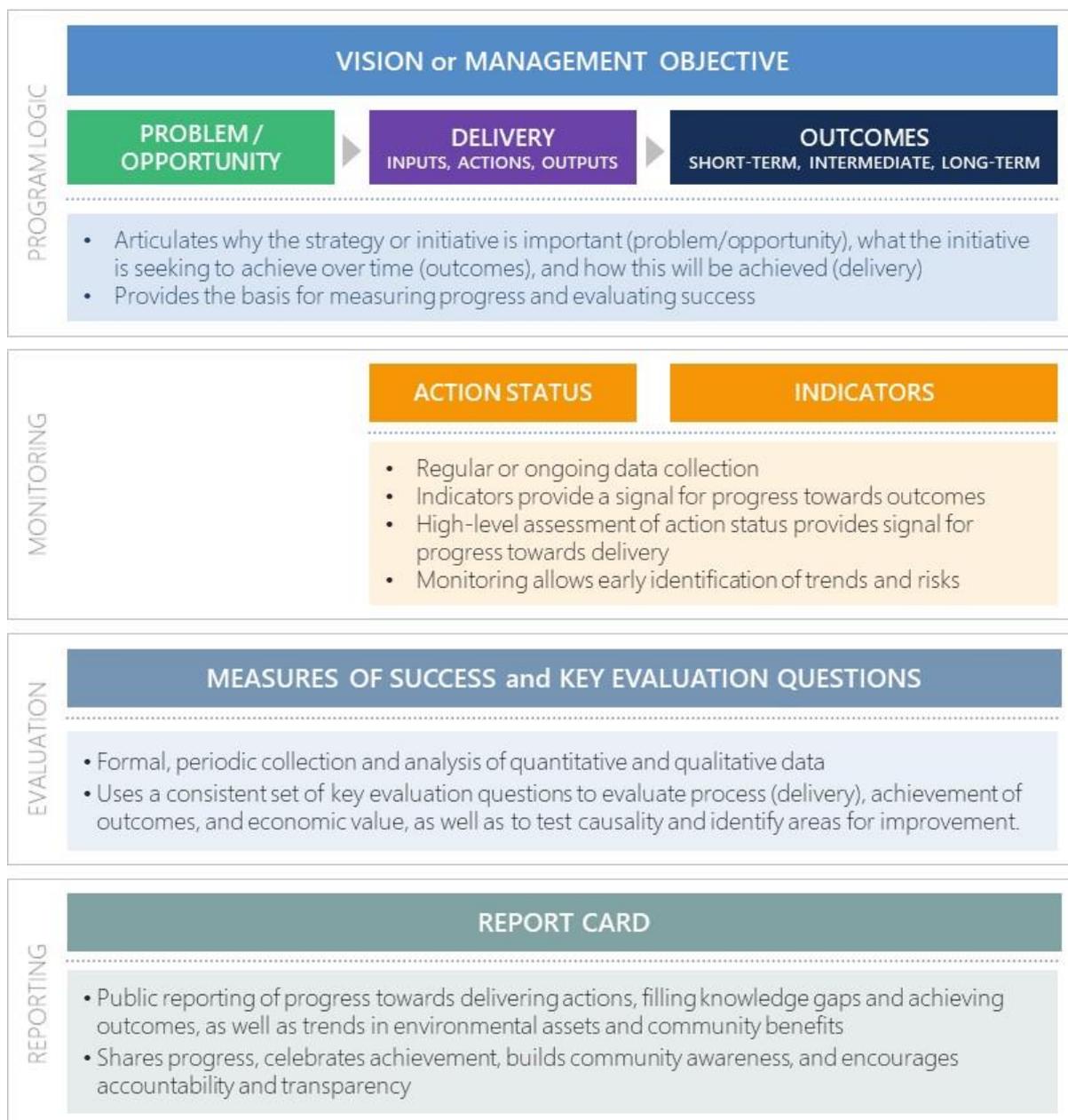


Figure 2 Summary of main components of the Monitoring and Evaluation Framework

## 3.2. Program logic

### 3.2.1. Introduction

Program logic is a common approach to strategic planning. It expresses how change is expected to occur within a system. It captures the rationale behind a program or initiative, probing and outlining the anticipated cause-and-effect relationships between defined inputs, management actions, outputs and outcomes. Program logic also provides a consistent basis upon which to monitor success and drive continuous improvement in the way management actions and programs are identified, delivered and refined over time.

A program logic has been developed for the overarching MEMS and for each management initiative. Each initiative program logic provides:

- a summary of the management actions identified in the MEMS
- a set of outcomes that articulate the desired change intended to result from undertaking the management actions collectively
- assumptions and constraints, including noting relationships with other management initiatives.

The outcomes in the program logics provide a bridge between the management actions and management objectives contained in the MEMS. The outcomes are articulated for short- (0-2 years, plus ongoing), intermediate (2-5 years, plus ongoing), and long-term (5-10 years, plus ongoing) timeframes to reflect the expected incremental nature of change, or theory of change, that is required to achieve success over the life of the ten-year MEMS. Although there is expected to be demonstrable progress towards these outcomes within the identified timeframes, it is important to note that ongoing effort may be required to ensure that these outcomes endure beyond those timeframes. This is particularly true of the long-term outcomes, where it is expected that progress will be made towards these outcomes over the next ten years, however, further and ongoing management of the marine estate will be required to ensure these outcomes are maintained and continue beyond the life of the MEMS.

There are 76 outcomes across the nine initiatives. The outcomes:

- seek to clearly articulate what success looks like for each initiative
- are deliberately high-level, largely avoiding prescribing specific actions or processes
- are framed, with appropriate detail, for the intended audience (e.g., Minister, senior executive, general public)
- are often inherently interrelated, both within and between management initiatives, reflecting the interrelationships between the management initiatives and what the existing suite of management actions is seeking to achieve.

The general program logic structure and summary of terms used for the Monitoring and Evaluation Framework are provided below (Figure 3). The program logics for the overall MEMS and for each management initiative are introduced in the following sections.

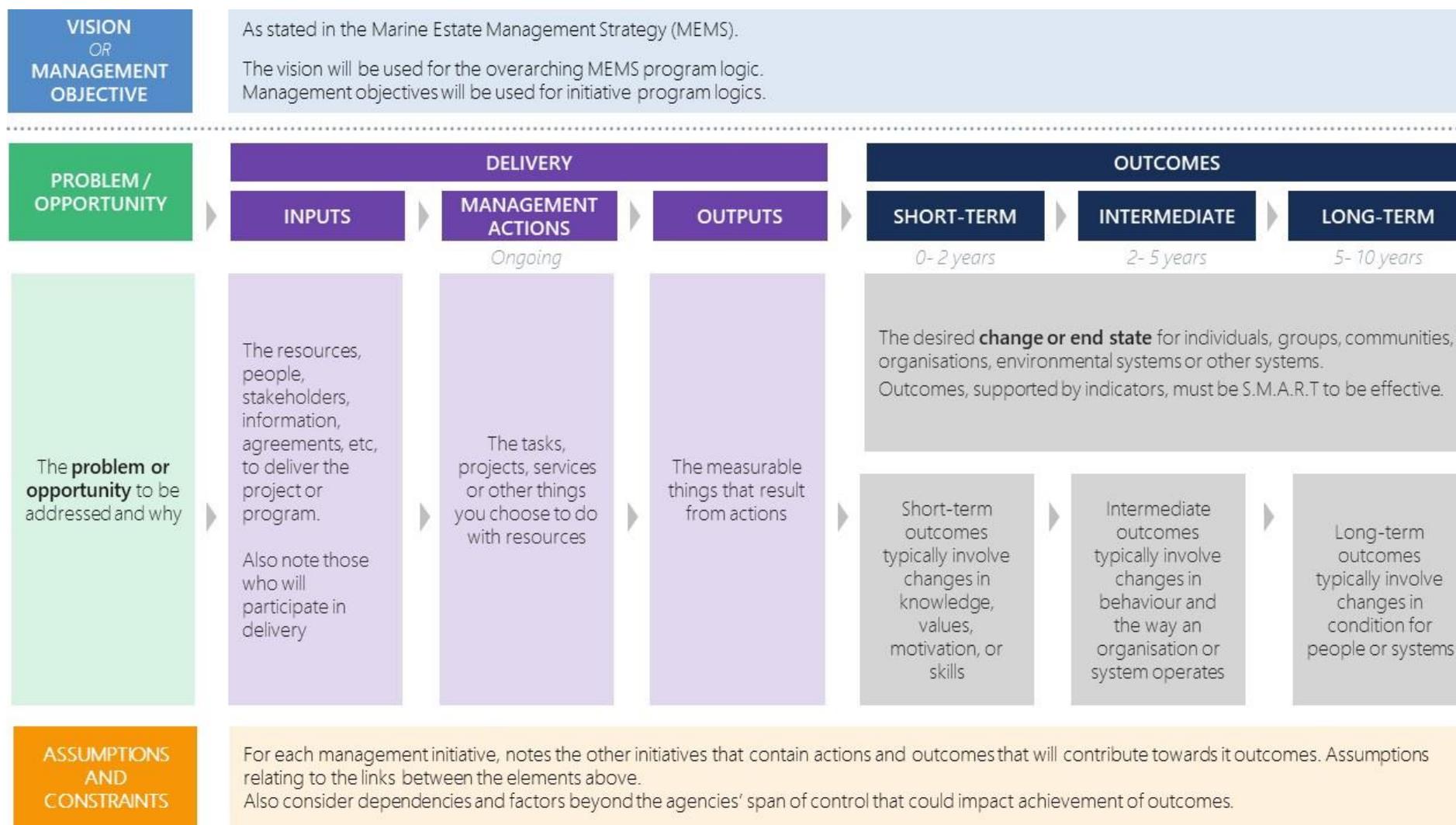


Figure 3 Program logic structure, terms and definitions

### 3.2.2. Overarching MEMS program logic

The overarching program logic articulates a concise set of high-level MEMS outcomes that deliver upon MEMA's vision of *'a healthy coast and sea, managed for the greatest wellbeing of the community, now and into the future'*. The MEMS outcomes are grouped into the following overarching areas of change:

- Natural and built environment
- People, communities and business
- Governance and management.

The areas of change are inherently interrelated, with outcomes in one area often supporting outcomes in others. In particular, achievement of outcomes in governance and management will be important for success in the other two areas, while some outcomes within the people, communities and business domain will be supported by success in each of the other two domains. It is expected that progress will be made towards these outcomes over the next ten years, however, further and ongoing management of the marine estate will be required to ensure these outcomes are maintained and continue beyond the life of the MEMS.

The overarching program logic for the MEMS is presented below (Figure 4).

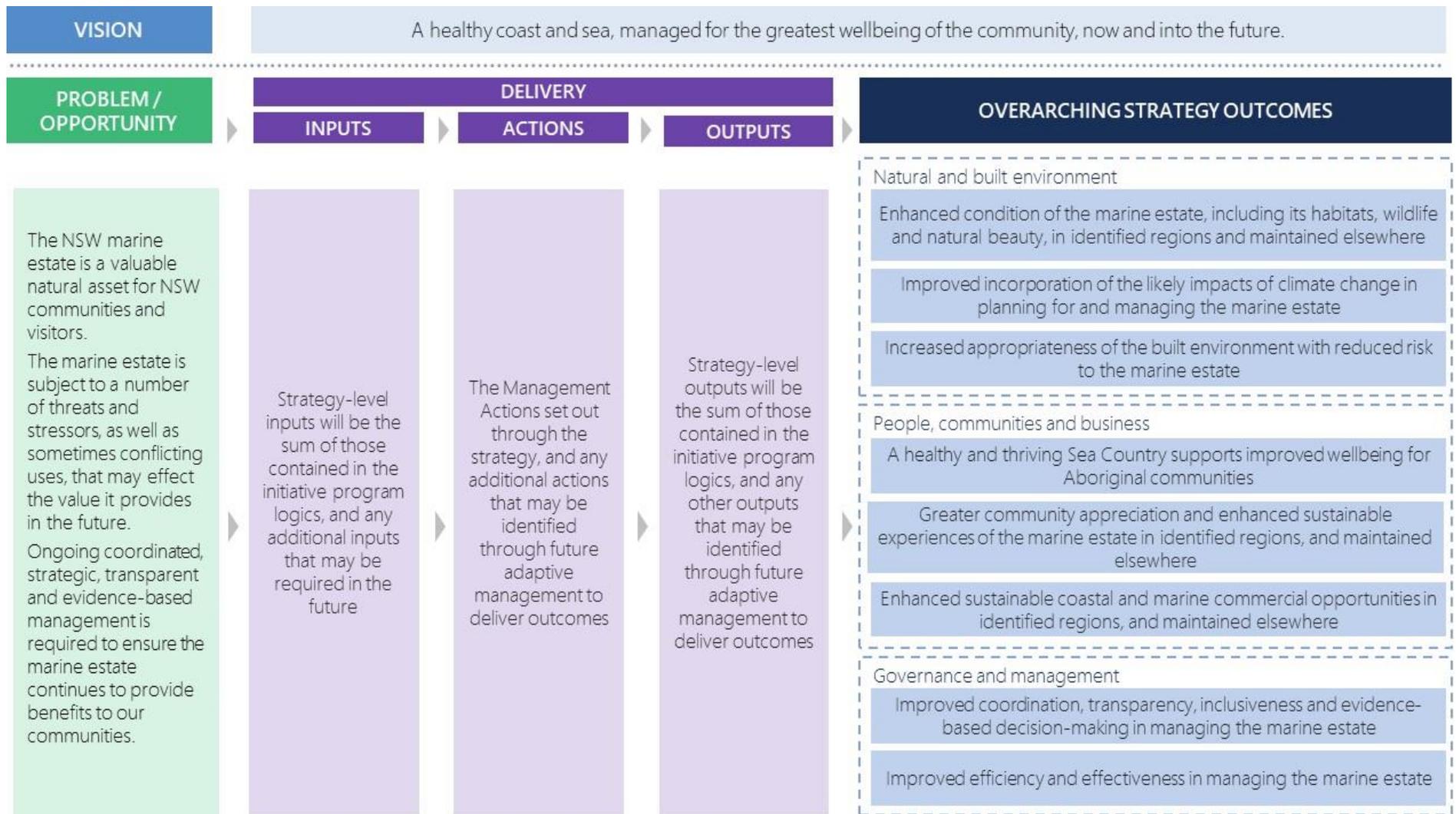


Figure 4 Overarching program logic developed for the Marine Estate Management Strategy

### 3.2.3. Initiative program logics

The Monitoring and Evaluation Framework contains nine initiative-level program logics, which articulate the intended outcomes sought by each management initiative. These are:

- **Initiative 1: Improving water quality and reducing litter** focuses on improving water quality and reducing marine litter for the benefit of marine habitats, wildlife and the community.
- **Initiative 2: Delivering healthy coastal habitats with sustainable use and development** focuses on protecting coastal and marine habitats and associated species and enhancing the health of the marine estate by improving the design, quality and ongoing management of foreshore development, use and waterway infrastructure.
- **Initiative 3: Planning for climate change** focuses on understanding, adapting and increasing resilience to help mitigate the impacts of climate change on the NSW marine estate.
- **Initiative 4: Protecting the Aboriginal cultural values of the marine estate** focuses on working with Aboriginal communities in the management of Sea Country to reduce threats and risks to Aboriginal cultural heritage.
- **Initiative 5: Reducing impacts on threatened and protected species** focuses on understanding and mitigating threats to threatened and protected species in NSW.
- **Initiative 6: Ensuring sustainable fishing and aquaculture** focuses on ensuring that fishing and aquaculture is managed in a way that is consistent with ecologically sustainable use while providing for the health, heritage and social benefits of fishing and seafood consumption.
- **Initiative 7: Enabling safe and sustainable boating** focuses on balancing protection of coastal and marine habitat and species with ongoing access and safe and sustainable boating.
- **Initiative 8: Enhancing social, cultural and economic benefits** focuses on improving the social, cultural and economic benefits that the NSW community derives from the marine estate by responding to priority threats.
- **Initiative 9: Delivering effective governance** focuses on improving governance arrangements across the marine estate to support coordinated, transparent, inclusive and effective decision-making.

The initiative level program logics are provided in Appendix A. Short-, medium and long-term outcomes were originally identified in 2019 and were revised in 2021 to reflect insights from the first two years of implementing the MEMS. The management initiatives are interrelated, with progress in one often supporting or depending on progress in another. Each program logic notes the other initiatives that contain management actions and outcomes that are important for achieving success in the given management initiative. Further detail on how each management action is expected to contribute towards achieving outcomes within its initiative is provided in the action-outcome maps that follow each program logic in Appendix A.

## 3.3. Monitoring

### 3.3.1. Introduction

Monitoring is the regular systematic collection and analysis of data or information to track management action implementation and give an indication of progress towards achieving outcomes. It is important to note that monitoring does not assess program success or achievement of outcomes. Instead, it uses indicators to help identify trends, issues or risks in relation to achieving outcomes.

Monitoring focuses on four main areas:

- monitoring program delivery through **management action status**
- monitoring of outcomes through **indicators**
- monitoring condition and trend of **environmental assets and community benefits**
- monitoring of **knowledge gaps**

These are described below. Details for how monitoring will be undertaken are provided in Section 4: Applying the Monitoring and Evaluation Framework.

### 3.3.2. Monitoring program delivery

The MEMS governance and project management framework has been established across MEMA agencies to provide a formal process for monitoring program delivery. A three-tiered reporting structure will assess management action status within each initiative and across the entire MEMS program on a quarterly and annual basis. This will provide an understanding how implementation of each management action and initiative is progressing in terms of budget, scope and schedule, and to identify any issues or risks to the completion of management actions. Monitoring program delivery involves collecting and assessing program and project management documentation relating to inputs, management actions and outputs.

### 3.3.3. Monitoring progress towards outcomes

Indicators will be used to provide quantifiable metrics for tracking performance towards outcomes over time. Indicators are aligned with outcomes, but may not capture all aspects of each outcome. Instead, they provide an indication or signal of the performance of a program, so that adjustments can be made, if required. They can be understood as the minimum level of information required to determine whether a program is on track to achieve its intended outcomes.

The Monitoring and Evaluation Framework uses two types of indicators: Key Performance Indicators (KPIs) and Leading Indicators (LIs). In summary:

- **KPIs** are headline indicators that generally align with long-term outcomes. Due to the sometimes-long lag times between management actions and observed changes for long-term outcomes, KPIs may not be appropriate for measuring outcomes that are expected to be achieved over the short to intermediate term. They might also be thought of as ‘lagging indicators’.
- **LIs** provide a signal for progress over the short-term and intermediate timeframes. LIs provide an early indication of performance and are important in areas where there is a longer lag time between undertaking an action and achieving the desired change. Monitoring these indicators allows for early intervention in management action design and delivery to ensure outcomes are

achieved. They typically capture changes in knowledge, processes and behaviour, which are expected to be precursors to changes in KPIs.

A conceptual representation of KPIs and LIs is outlined below in Figure 5.

Both KPIs and LIs are intended primarily to provide a signal for progress towards the outcomes articulated in the program logics. Some indicators will also support monitoring of environmental assets, community benefits and knowledge gaps, which will be developed in detail as part of addressing objectives 1 and 3 of the MIMP.

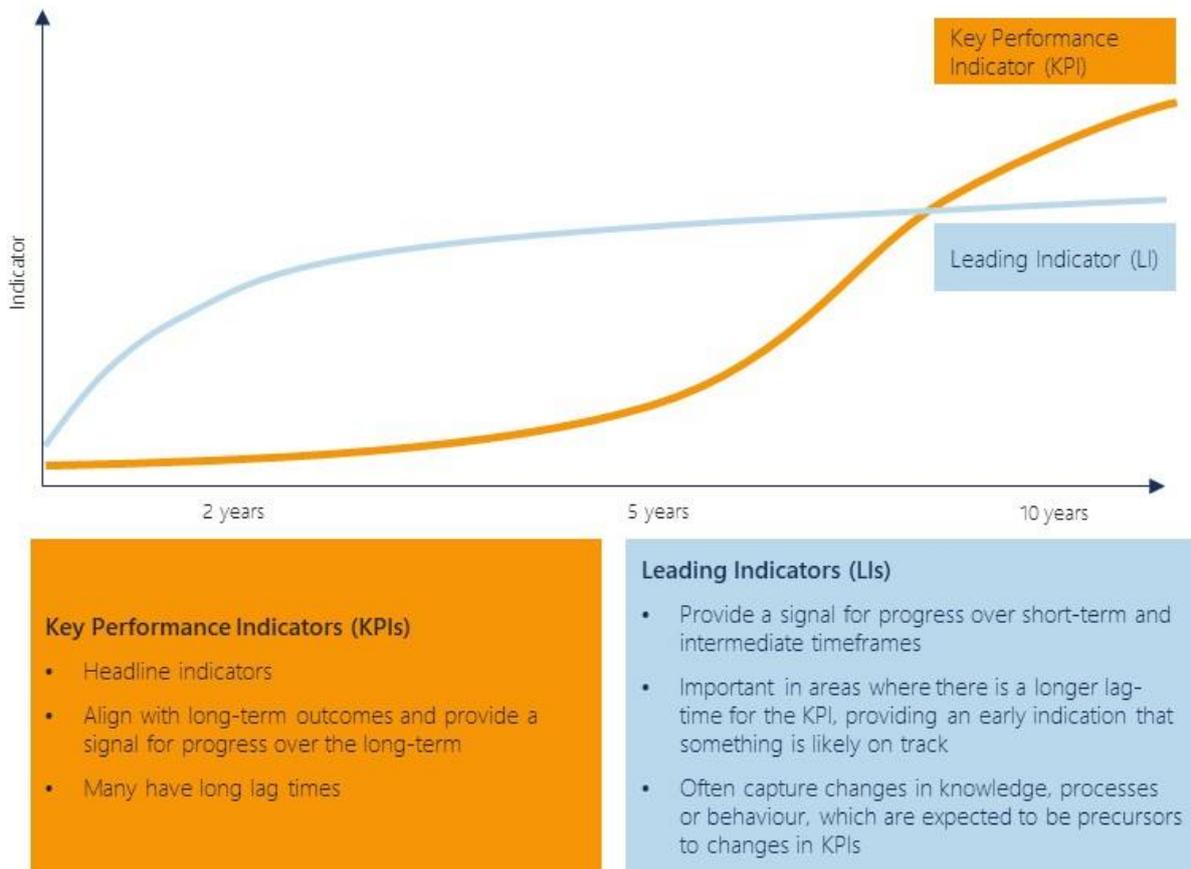


Figure 5 Types of indicators

There are many interrelationships and common themes across the 76 outcomes, both within and across the initiatives. To reflect these interrelationships and to facilitate coordination and efficiency in monitoring across the nine management initiatives, a single indicator may be used to track progress towards more than one outcome. This is more common among the LIs, with 20 out of 33 indicators linked to more than one outcome. KPIs tend to be unique to each initiative, with only seven KPIs applying to more than one outcome. Mapping of indicators to outcomes is shown for each management initiative in the monitoring plans in Appendix A.

Although change is expected to be observed at different timescales for different indicators, generally all indicators will be monitored over the life of the MEMS. This will allow marine estate managers to identify a baseline for each indicator. It will also demonstrate if, when and how trends begin to emerge and change over time. The frequency of data collection varies for each indicator and is specified in the initiative monitoring plans in Appendix A.

### 3.3.4. Monitoring the condition and trend of community benefits and environmental assets

A community benefit is anything that contributes to the wellbeing of the community. In the marine estate these have been broadly categorised into economic, social, cultural and environmental benefits with many being based on what people think is important (what they value) (NSW Marine Estate Management Authority 2017). Examples of community benefits include swimming at the beach, boating, harvesting seafood, running a business, clean waters and marine biodiversity, and valuing the environment regardless of direct benefits.

Monitoring community benefits, and the threats and stressors that pose a risk to these benefits, is a key component of the MIMP. This monitoring will allow the extent of impacts and reduction of risks to benefits to be tracked among locations and through time. The monitoring program will focus on a broad range of social, cultural and economic benefits identified in the state-wide TARA and NSW community surveys.

Monitoring of threats and stressors to community benefits will primarily focus on those that contributed to moderate, high or cumulative risk levels in the state-wide TARA, the 'priority threats' (Appendix A of the TARA). In this context, the greatest threats were primarily associated with water pollution and a general lack of social, cultural and economic information, lack of compliance with regulations, and lack of access to the marine estate. Unassessed threats will also be monitored, including those related to maritime heritage, such as shipwrecks and significant coastal landscapes (highlighted by the community as a gap in the state-wide TARA), to ensure that management actions can be taken in the future, if necessary.

Broad-scale monitoring is required to continue to evaluate the condition and trend of environmental assets and related stressors that contributed to moderate, high or cumulative risk levels in the state-wide TARA to inform the five-year health check and assessment of risks. An understanding of environmental condition and interaction with stressors at the local scale is essential components of risk evaluation, and one key mechanism in the MEMS to assess regional risks. This includes continuation and further implementation of indicators and measures in the previous NSW Monitoring, Evaluation and Reporting (MER) program that was reported in Roper et al. (2011).

These key datasets reported in the previous MER program relates to an assessment of water quality and the extent and distribution of aquatic macrophytes (seagrass, mangroves and saltmarsh). Additional stressors that are relevant to values other than aquatic ecological health will be added, such as primary contact recreation and edible seafood. In addition, broad-scale monitoring of environmental indicators will be developed during further stages of the MEMS, including the assessment and monitoring of estuarine and rocky reef fish assemblages. The program will include short to medium-term, response monitoring, long-term monitoring and citizen science monitoring.

### 3.3.5. Addressing knowledge gaps

Monitoring will also track progress in filling knowledge gaps identified in the state-wide TARA report. Key known social, cultural and economic knowledge gaps relate to:

1. Resource use conflict (in particular overcrowding/congestion, loss or decline of marine industries);
2. Effect of climate change on social and economic benefits of the marine estate;
3. Environmental, in particular:
  - Extent of wildlife disturbance impacts (including noise) on protected species,

- Impacts on trophic levels of fish assemblages from recreational and commercial fishing,
  - Many climate change stressors for both 20- and 50-year projections,
  - Dredging, aquaculture, mining activities, service infrastructure and some fishing methods on threatened and protected marine mammals, seabirds and reptiles,
  - Urban stormwater discharge on several environmental assets, and
  - Point discharges and sewage effluent on several environmental assets;
4. Governance of the marine estate (in particular lack of community awareness of the marine estate);
  5. Public safety (in particular wildlife interactions, seafood contamination, other water pollution/contamination affecting human health and safety);
  6. Critical knowledge gaps (inadequate social and economic information);
  7. Loss of public access (in particular, limited or lack of access infrastructure to the marine estate, loss of public access), and;
  8. Knowledge and awareness of the tangible and intangible benefits that indigenous people derive from the marine estate.

Priority knowledge gaps relate to those specific issues that were identified as having low, moderate and high risk to the environmental assets of social and economic benefits in the TARA, and these risks being supported by limited or inferred evidence. Further knowledge gaps were provided by stakeholders as part of public consultation on the TARA. It is important that these knowledge gaps are addressed alongside implementation of the MEMS and through monitoring and evaluation processes to inform future planning.

Specific projects will be developed to target priority knowledge gaps, some of which may be based on desktop analysis of new scientific literature, while others may include targeted field surveys or laboratory experiments. These will be focussed on knowledge gaps relating to both environmental condition and relevant stressors at appropriate spatial scales. The results of this new knowledge will be regularly incorporated into updated background reports that will document these against the relevant components of environmental condition or stressors.

## 3.4. Evaluation

### 3.4.1. Introduction

Evaluation is the formal, periodic collection and analysis of data or information to understand and demonstrate the value of the program and the extent to which it is achieving, or has achieved, what it set out to achieve. The NSW Government Program Evaluation Guidelines describes evaluation as 'a rigorous, systematic and objective process to assess the effectiveness, efficiency, appropriateness and sustainability of programs' (NSW Department of Premier and Cabinet, 2016). Evaluation also includes consideration of implementation risks, lessons and recommendations for future planning.

This Framework includes three types of evaluation:

- **Process evaluation**, which focuses on delivery of management actions
- **Outcome evaluation**, which focuses on assessing the extent to which outcomes are achieved or are on track to be achieved

- **Economic evaluation**, which considers the value and efficiency of the program.

These are described in more detail below. The evaluation types align with the main components of the program logic, shown conceptually below (Figure 6). Each type of evaluation will be complemented by a brief review of the context and basis for the MEMS or management initiative. This helps to identify any changes in the broader management context or understanding of issues that may affect (positively or negatively) program delivery or success.

Evaluation will provide an assessment against overarching measures of success (see Section 3.4.2), which will be explored through key evaluation questions (KEQs) (see Section 3.4.3). Evaluation will draw on a range of data, including, but not limited to, data collected through monitoring processes. Details for how evaluation will be undertaken are provided in Section 4: Applying the Monitoring and Evaluation Framework.

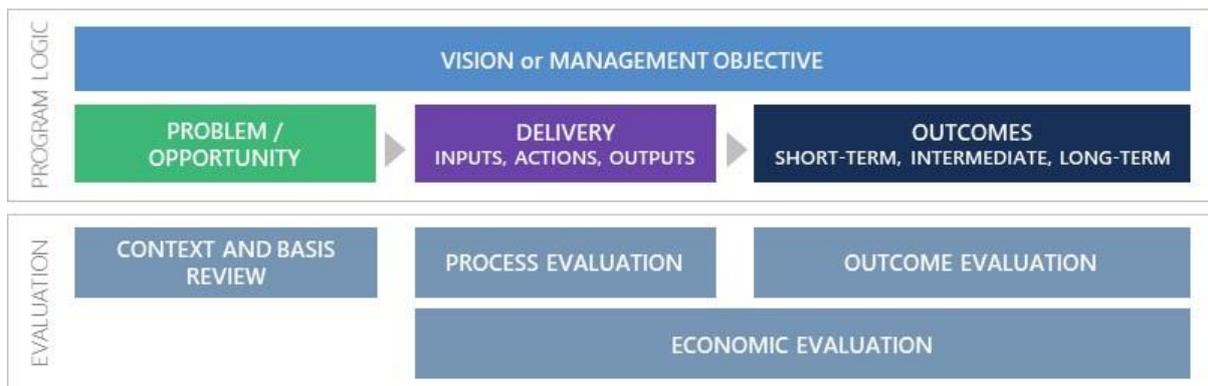


Figure 6 Evaluation types and alignment with main components of the program logics

### *Types of evaluation*

The three types of evaluation (process, outcome and economic) are outlined below. The evaluation types and definitions are drawn from the *NSW Government Program Evaluation Guidelines* (NSW Department of Premier and Cabinet, 2016).

### *Process evaluation*

Process evaluation looks at how a program is delivered, describing the program’s current operating conditions and identifying processes that may hinder success. It supports adaptive management and continuous improvement by identifying and informing adjustments to service delivery to ensure success. Process evaluation is also valuable in supporting outcome evaluation, as it can help diagnose issues if a program has not achieved the intended outcomes.

### *Outcome evaluation*

Outcome evaluation considers whether a program has achieved, or is on track to achieving, its intended outcomes, and tests the anticipated causal links between actions and outcomes. Outcome evaluation also considers whether the program has produced any positive or negative unintended consequences for participants or stakeholders.

### *Economic evaluation*

Economic evaluation often combines qualitative and quantitative measures that seek to identify, measure, and value a program’s economic costs and benefits. It can be used to inform decision-

making and promote efficiency in delivery. Ideally, economic evaluation includes cost benefit analysis (CBA).

### 3.4.2. Measures of success

Measures of success provide an overarching assessment of MEMS delivery, processes and achievement. The measures of success are:

- Did you do what you said you would do; on time and within budget?
- Did you achieve the outcomes you set out to achieve?
- Were your actions appropriate for achieving the outcomes?

Measures of success are explored during evaluation through a set of KEQs.

### 3.4.3. Key evaluation questions

Each type of evaluation will be guided by KEQs, which align with the main elements of the program logics. The KEQs are important for developing an accurate picture and evidence-base to understand successes and learning opportunities from implementation of the MEMS. The KEQs have been developed to assess the appropriateness, efficiency, effectiveness and sustainability of the MEMS and initiatives, and are tailored for process, outcome and economic evaluations. Evaluation will draw on a range of quantitative and qualitative data and information, including but not limited to data gathered through monitoring processes (see Section 3.3).

The same set of questions is applicable to the overarching MEMS and to each initiative, ensuring that evaluation is undertaken consistently across all initiatives.

## 3.5. Reporting

### 3.5.1. Introduction

Reporting on progress and sharing information is an important part of implementing any strategy or program. Reporting encourages accountability for responsible agencies through transparent reporting of progress towards outcomes and the fulfilment of responsibilities. It provides a platform for celebrating success and for sharing knowledge and insights, so that agencies can learn from each other, adapt and continually improve. It can also be used to build community awareness and interest, leading to positive behaviour change and strengthened social licence.

Reporting for the MIMP will be undertaken through a public report card. The report card will draw on content from MEMS annual reports, and monitoring and evaluation findings. The main drivers for producing a report card are to:

- **Share and build knowledge** – through documenting and sharing data and information to support a greater shared knowledge-base.
- **Create behaviour change** – by building community awareness of the marine estate, including what the marine estate incorporates; the social, economic and environmental values that the marine estate provides; and how community and individual behaviour can have a positive or negative effect on these values. Creating behaviour change also includes building community ownership for the condition and management of the marine estate.

- **Provide accountability** – through transparent reporting of marine estate condition and management, evaluation provides incentives for delivery and partner agencies to fulfil responsibilities and complete management actions; to strive for continuous improvement in their own jurisdictions or remit; and ensure MEMS implementation delivers value for money.
- **Secure social and political licence** – by building a more informed and engaged community with increased expectations for government support and action; establishing credibility of the marine estate managers through sharing progress and celebrating success; and building the case for future resources.

### 3.5.2. Principles for the report card

The report card template and structure, and the content and information that is reported through the report card, will be developed in accordance with the following principles:

- **Simple and clear** – it can be easily understood by a broad audience.
- **Transparent** – it openly and visibly shows the processes, management actions, and outcomes of marine estate management.
- **Accountable** – it keeps agencies focused on delivering the commitments of the MEMS and initiatives.
- **Accessible** – it can be easily accessed by the target audiences, including those with different needs or abilities.
- **Credible** – it is robust and based on sound evidence.
- **Relevant** – it is meaningful to the target audiences and their particular interests.
- **Honest** – it reports results, trends and analysis openly and accurately.

### 3.5.3. Audiences and key messages

Four audience groups are identified for the report card. These are described below (Table 1), along with the key message to convey to each audience group and the type of information that may be required to convey that message.

Engagement objectives are being developed for each audience group. Once engagement objectives are confirmed, the key messages and types of information shown below, which were identified in 2019, will be reviewed to align with the engagement objectives.

Table 1 Identified audiences and key messages for the MIMP report card

Priority	Audience	Description	Key message	Types of information to convey key message
1	Targeted stakeholders (engaged community)	Includes community interest groups, industry and peak bodies, conservation groups, avid and vocal users of the marine estate	<ul style="list-style-type: none"> <li>• We recognise your knowledge and passion for the marine estate.</li> <li>• We are working with you to better manage the marine estate, through consideration of the attributes and values that are most important to you and sharing with you the management actions we are taking and why.</li> </ul>	<ul style="list-style-type: none"> <li>• Information on marine estate values and benefits.</li> <li>• Information on management actions and why they were taken, including consideration of community input and scientific basis</li> <li>• The outcomes that these management actions contribute towards.</li> <li>• Information on opportunities to participate in and influence marine estate management.</li> </ul>
2	Decision-makers	Includes ministers, other politicians, Treasury, senior government staff	<ul style="list-style-type: none"> <li>• A healthy marine estate is fundamental to the NSW community and economy.</li> <li>• We manage the marine estate with contribution from the community to enhance the benefits it provides to the NSW community and the economy</li> <li>• We are delivering what we said we would deliver, efficiently and effectively.</li> </ul>	<ul style="list-style-type: none"> <li>• The vision for the marine estate.</li> <li>• Broad information on values associated with the marine estate.</li> <li>• Broad information on the benefits, both expected and realised, of effective management of the marine estate.</li> <li>• Why we need to deliver management actions, including the risks of not delivering.</li> <li>• Progress in delivering management actions.</li> <li>• Evaluation of effectiveness, efficiency and outcome achievement.</li> </ul>

Priority	Audience	Description	Key message	Types of information to convey key message
3	General community (engageable community)	The broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged.	<ul style="list-style-type: none"> <li>• What the Marine estate is</li> <li>• The marine estate is healthy and productive, and it benefits you (and the wider NSW community) in many ways</li> <li>• We manage the marine estate to enhance the benefits it provides (such as beaches, open space, production of food, recreation, economic return, etc) for you and the wider NSW community</li> </ul>	<ul style="list-style-type: none"> <li>• The vision for the marine estate.</li> <li>• Broad information on values associated with the marine estate.</li> <li>• Broad information on the benefits of our work managing the marine estate.</li> <li>• Broad information on how we are managing the marine estate.</li> </ul>
4	Responsible and related agencies, and other delivery partners	<p><i>Responsible agencies</i> include the four agencies represented in MEMA.</p> <p><i>Related agencies</i> include other relevant government departments and agencies, councils, researchers.</p> <p>Other <i>delivery partners</i> include Traditional Owner and Aboriginal groups.</p>	<ul style="list-style-type: none"> <li>• We have shared objectives for the marine estate</li> <li>• We are working collectively and collaboratively to achieve these objectives</li> <li>• We also have responsibilities and priorities specific to individual agencies to ensure our shared objectives are achieved</li> </ul>	<ul style="list-style-type: none"> <li>• Progress in delivering management actions, including individual and collective progress.</li> <li>• Information to be contained in internal communication between partner agencies. External and internal reporting should not be contradictory; however, they may include different levels of detail. <ul style="list-style-type: none"> <li>– agencies’ respective future priorities</li> <li>– agencies’ respective roles, responsibilities and capacity/capability to support other agencies’ in delivery of theirs</li> </ul> </li> </ul>

## 4. Applying the Monitoring and Evaluation Framework

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### 4.1. Summary

This section provides guidance for MIMP staff, initiative leads, other relevant agency staff and any potential third-party evaluator on applying the Monitoring and Evaluation Framework. It sets out:

- the approach to monitoring program delivery, progress towards outcomes, condition and trend of environmental assets and community benefits, and knowledge gaps. It introduces indicators and describes the suite of KPIs, with details of each indicator and initiative-level monitoring provided in the appendices.
- evaluation questions, method, stages and reporting.
- the framework for the public report card.

Detailed guidance on data sources, collection and management for monitoring and evaluation is provided in Appendix B.

### 4.2. Monitoring

#### 4.2.1. Monitoring program delivery

Program delivery (process) will be monitored through assessment of management action status within each management initiative. Monitoring data for management action status will be collected through the MEMS project management process for quarterly and annual status reporting. It will include data relating to inputs, outputs and progress in delivering the scope of each management action. Further detail on data collection for monitoring program delivery is provided in Appendix B.

Management action status categories and definitions are provided below (Table 2).

Table 2 Program delivery status definitions

Management action status	Definition
Not yet commenced	The management action has not yet commenced. It should be noted if this aligns with the delivery schedule.
In progress and on track	The management action is currently being undertaken and is aligned with the delivery schedule.
In progress but delayed	This management action is currently being undertaken but has been delayed. Strategies are in place to get the action back on track.
Achieved and ongoing	The management action has been achieved, but ongoing effort is needed to ensure the intended outcome of the management action continues to be maintained.
Achieved and completed	The management action has been completed in full.

#### 4.2.2. Monitoring progress towards outcomes

Monitoring of progress towards outcomes will be undertaken by collecting data against a suite of outcome indicators. These include key performance indicators (KPIs) and leading indicators (LIs) (see Section 3.3 for definitions). Indicators were originally identified in 2019 and were revised in 2021 to reflect insights from the first two years of implementing the MEMS and monitoring progress.

A complete list of indicators is provided at the end of Appendix A. Individual KPIs are described in the Section 4.2.3.

Detailed monitoring requirements for each initiative are provided in the initiative monitoring plans in Appendix A. The initiative monitoring plans include specifications, measures, data sources, collection frequency, indicator leads and assumptions for each indicator linked to the outcomes within that initiative. All indicators (KPIs and LIs) will be measured over the life of the MEMS. Further information on data sources, including survey data, is provided in the data collection and management plan in Appendix B. The identified indicator leads will collect data for each indicator as specified in Appendix A and in accordance with the data collection and management plan in Appendix B.

The approach to monitoring against outcomes seeks to support data collection that is practical and efficient, while providing sufficient insights to inform management of the marine estate. Data collection for indicators draws on existing monitoring processes and data where possible. By considering monitoring needs across the MEMS more broadly, it also creates opportunities to coordinate among initiatives and responsible agencies.

Since several initiatives and outcomes share indicators, common data collection processes will be used across multiple initiatives and outcomes, where possible. However, in some cases, data sets will be tailored to capture the specific focus of individual initiatives, such as stakeholder groups or administrative processes that are of particular interest to that initiative.

Multiple indicators require data to be collected through survey questions of relevant stakeholders, which may be the general community, targeted stakeholders, partners including Traditional Owners and the Aboriginal community, and/or responsible and related agencies. These indicators and the

relevant stakeholders are defined in the Appendix A. It is intended that data collection through this method will be coordinated across all relevant management initiatives and indicators, such that data is collected through the minimum number of surveys. The main survey processes are:

- Coastal Residents Survey
- Visitors Survey
- Sea Country (marine estate) Survey,
- Targeted stakeholder surveys,
- Responsible and related agency survey (agency staff survey).

A summary of those indicators that will be measured (or partly measured) through surveys is provided below (Table 3). The surveys will be repeated three times over the life of the MEMS, in alignment with the three evaluations (see Section 4.3). In addition, some indicators will draw on data collected through post-event surveys, for example feedback surveys following a specific workshop, presentation or other kind of engagement activity. The event-based surveys will be led by relevant initiative or project leads.

Table 3 Summary of indicators with data collection via survey

KPI / LI code	KPI / LI	Survey				
		Coastal Residents; Visitors	Sea Country	Targeted stakeholders	Agencies	Pre/post event
KPI 3	Community wellbeing indicator	✓	✓			
KPI 6	Aboriginal people report satisfaction with Sea Country management					
KPI 7	Aboriginal employment and opportunities in relation to the marine estate					✓
KPI 8	Trend in ecological sustainability, economic viability and community wellbeing measures for fishing and aquaculture			✓		
KPI 9	Trend in ecological and social measures for boating			✓		
KPI 10	Community and targeted stakeholders demonstrate improved capacity to anticipate and adapt to climate change impacts			✓	✓	✓
KPI 12	Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate	✓*	✓	✓	✓	
KPI 13	Community members report awareness and appreciation of the significance of Sea Country values	✓				
KPI 14	Agency staff report using decision-making and approvals processes for foreshore and coastal land use management, design and development that balances social and economic benefits with enhancing coastal and marine habitats				✓	

\* Not included in the Visitors Survey

KPI / LI code	KPI / LI	Survey				
		Coastal Residents; Visitors	Sea Country	Targeted stakeholders	Agencies	Pre/post event
KPI 15	Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders	✓		✓	✓	✓
KPI 16	Stakeholders report satisfaction with efficiency and effectiveness governance of the marine estate				✓	
KPI 18	Community reports satisfaction with the health of their local waterways					
LI 2	Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality			✓	✓	✓
LI 5	Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate			✓	✓	✓
LI 6	Responsible agencies report improved simplicity, clarity and efficiency for regulatory processes and approvals				✓	
LI 7	Agency staff report using information relating to social, cultural, economic and environmental values in their strategies, plans, programs and decision-making processes				✓	
LI 8	New or improved processes or events for sharing knowledge among responsible agencies, and between responsible agencies and targeted stakeholders and the community				✓	

KPI / LI code	KPI / LI	Survey				
		Coastal Residents; Visitors	Sea Country	Targeted stakeholders	Agencies	Pre/post event
LI 9	Related agencies report improved understanding of current coastal and foreshore land uses in prioritised regions				✓	
LI 10	Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	✓		✓		✓
LI 11	Responsible agencies report confidence with capacity to fulfil governance roles and responsibilities			✓	✓	
LI 12	Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate			✓		
LI 15	Aboriginal participants satisfaction with events, activities or programs for involvement in Sea Country management, planning and monitoring					✓
LI 17	Responsible agencies recognise and demonstrate understanding of Aboriginal cultural values, roles and responsibilities in managing Sea Country				✓	
LI 20	Targeted stakeholders report attitudes and awareness that align with safe and sustainable boating practices					
LI 21	Targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	✓		✓		✓

KPI / LI code	KPI / LI	Survey				
		Coastal Residents; Visitors	Sea Country	Targeted stakeholders	Agencies	Pre/post event
LI 23	Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate			✓		
LI 24	Community members report awareness and clarity of agencies' respective roles and responsibilities in managing the marine estate	✓				
LI 25	Responsible agencies and targeted stakeholders demonstrate awareness of benefits of, and threat to, the marine estate			✓	✓	
LI 26	Community and stakeholder satisfaction with experience participating in the management of the marine estate					✓
LI 27	Community members report awareness and appreciation of the benefits and significance of commercial and recreational fishing and aquaculture	✓		✓		
LI 30	Improved capacity for Aboriginal people to participate in Sea Country Management					✓
LI 31	Increased inclusion of Aboriginal people and cultural values in decision-making processes for the marine estate			✓		✓
LI 32	Responsible agencies demonstrate improved processes and capacity to respond to wildlife incidents					✓
LI 33	Optimal animal welfare results following a wildlife incident involving a threatened or protected species					✓

### 4.2.3. Overview of KPIs

There are 18 KPIs identified for monitoring trends against long-term outcomes across the nine initiatives. Some KPIs will also apply to intermediate outcomes, and some will also be relevant for monitoring trends against the overarching MEMS outcomes. The KPIs are described in this section, with further details provided in Appendix A.

#### *KPI 1 – Waterway health supports community values*

This indicator relates to the long-term outcome 1A 'Waterway health in the marine estate aligns with community values' within Initiative 1 '*To improve water quality and reduce marine litter for the benefit of marine habitats, wildlife and the community*'. It also relates to the MEMS outcome '*Enhanced condition of the marine estate, including its habitats, wildlife and natural beauty, in identified regions and maintained elsewhere*'.

This indicator focusses on aligning available waterway health data with related community values. The NSW Water Quality and River Flow Objectives highlight the community values for each estuary and catchment in NSW, as well as water quality indicators that reflect those specific community values. Protection of aquatic ecosystems (PAE), primary contact recreation (PCR) and edible seafood (ES) are identified as the primary community values in the NSW marine estate, and are reflected as measures for this indicator. In addition, an ecological health grade is being developed and will be included as a measure in the future.

#### *KPI 2 – Reduction in litter in the marine and estuarine environments in targeted regions*

This indicator relates to long-term outcome 1B '*Reduction in input litter to the marine estate in alignment with community values*', and will also be used to measure progress against the intermediate outcome 1I '*Reduction in input litter in target regions*.' It also relates to the MEMS outcome '*Enhanced condition of the marine estate, including its habitats, wildlife and natural beauty, in identified regions and maintained elsewhere*'.

Data will be drawn from monitoring programs operated by NSW EPA. Initially, this indicator drew on data from the National Litter Index (NLI), which used a measure of the volume of litter per 1000 square metres published in the quarterly Keep Australia Beautiful National Litter Index. From 2021 onwards, this indicator will instead draw on the Key Litter Item Study, which will provide a measure based on debris items per 1000 square metres (in urban estuarine environments). 'Targeted regions' for the purpose of this indicator will be selected based on the TARA.

#### *KPI 3 – Community wellbeing indicator*

This indicator is primarily related to the social and cultural component of long-term outcome 8A '*Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community*' within Initiative 8 '*Enhancing social, cultural and economic benefits*'. It also relates to the MEMS outcome '*Greater community appreciation and enhanced sustainable experiences of the marine estate in identified regions, and maintained elsewhere*'.

This indicator focuses on the perceptions of the marine estate's contribution to a person's overall quality of life. Quality of life is the individual perception of their position in life, and is a broad ranging concept that can include a person's physical and mental health, values and beliefs, social relations and their dependency on the environment. This indicator captures subjective aspects of quality of life and will be measured through respondents' satisfaction in relation to feelings about themselves and their

dependency on the marine estate. Perceptions of the degree to which the marine estate contributes to quality of life will be assessed through the Coastal Residents Survey, Visitors Survey and Sea Country (marine estate) Survey.

#### *KPI 4 – Biodiversity and habitat indicator*

This indicator primarily relates to outcomes 1C and 2B '*Maintained or improved biodiversity and marine habitats*'. It also relates to the MEMS outcome '*Enhanced condition of the marine estate, including its habitats, wildlife and natural beauty, in identified regions and maintained elsewhere*'.

This indicator incorporates measures of biodiversity and ecological integrity. These themes are consistent with those identified within the broader Biodiversity Indicator Program, which is currently defined for terrestrial environments (NSW OEH and CSIRO, 2018) and is being expanded to cover aquatic environments. It also relates to the monitoring of management responses, stressors, and the status of biodiversity. The measures will be implemented progressively during the MEMS, reflecting resource availability, and readiness of data and technology. Some measures are in developmental and require further research or confirmation of new technologies to confirm their feasibility. Measures may be developed and reported in different ways and at different geographic, taxonomic and temporal scales. Overall, the biodiversity and habitat indicator will also aim to allow improved evaluation of ecosystem resilience in deriving an overall measure of ecological health.

The measures for this KPI were developed collaboratively by staff from Initiative 1, Initiative 2 and the Environmental MIMP Technical Working Group.

#### *KPI 5 – NSW contribution to national body of knowledge, approaches and plans for conservation of targeted threatened and protected species*

This indicator relates to outcome 5B '*Increased NSW contribution to national conservation of targeted threatened and protected species*' within Initiative 5 '*Reducing impacts on threatened and protected species*'. It also relates to the MEMS outcome '*Enhanced condition of the marine estate, including its habitats, wildlife and natural beauty, in identified regions and maintained elsewhere*'.

This indicator seeks to measure NSW's contribution towards and leadership in national conservation of coastal and marine species that are listed as threatened and protected under the *Biodiversity Conservation Act 2016* and threatened under the *Fisheries Management Act 1994*. Measures capture NSW's leadership or involvement in developing new management methods or processes that can be applied elsewhere; preparing national species plans; and publications relating to threatened and protected species. It also includes providing advice to other jurisdictions, and NSW-developed programs, guidelines or codes of practice that are adopted by other jurisdictions.

#### *KPI 6 – Aboriginal people report satisfaction with Sea Country management*

This indicator relates to outcome 4A '*Improved Aboriginal satisfaction with Sea Country management*' within Initiative 4 '*Protecting the Aboriginal cultural values of the marine estate*'. It also relates to the MEMS outcome '*A healthy and thriving Sea Country supports improved wellbeing for Aboriginal communities*'.

This indicator focuses on Aboriginal peoples' satisfaction with processes for participating in and influencing Sea Country management. Measurement of this indicator will focus on those involved in programs, initiatives or activities that result from the framework for effective and appropriate Aboriginal involvement in Sea Country management and decision-making, and the integrated Aboriginal engagement model for participation in Sea Country management, planning and

monitoring, both to be developed through management actions in Initiative 4. Measures may also be informed by the Aboriginal engagement model, once completed. The measure for this indicator is the average satisfaction rating and will be collected through the Sea Country (marine estate) Survey.

#### *KPI 7 – Aboriginal employment and opportunities in relation to the marine estate*

This indicator relates to long-term outcome 4H *'Improved Aboriginal participation in Sea Country management, planning and monitoring'*, and intermediate outcomes 4F *'Increased opportunities for Aboriginal people to derive economic benefit from the NSW marine estate'* and 4C *'Aboriginal people derive greater economic benefit from the marine estate'* within Initiative 4 *'Protecting the Aboriginal cultural values of the marine estate'*. It also relates to the MEMS outcome *'A healthy and thriving Sea Country supports improved wellbeing for Aboriginal communities'*.

While these outcomes, and the management actions and projects that contribute towards these outcomes, encompass various industries and sectors that relate to the marine estate, data limitations mean that the indicator and measures focus on employment and opportunities related to the government sector. This includes various types of roles and employment arrangements within responsible and related agencies, and government goods and services contracts awarded to Aboriginal-owned entities and businesses in relation to the marine estate. The indicator also includes a measure to capture employment results for those who have participated in training courses or programs that were supported by Initiative 4. Data for this indicator will be sourced from the NSW public service procurement and employment data, ABS, and post-training discussions with participants.

#### *KPI 8 – Trend in ecological sustainability, economic viability and community wellbeing measures for fishing and aquaculture*

This indicator primarily relates to outcome 6A *'Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate'* within Initiative 6 *'Ensuring sustainable fishing and aquaculture'*.

This indicator includes measures for recreational fishing, and commercial fishing and aquaculture. Some measures are still in development. Measures will include a species sustainability index, which will draw on species stock status data; measures of wellbeing for commercial and recreational fishers and aquaculturalists that extend beyond economic wellbeing; participation in and expenditure associated with recreational fishing; satisfaction with the quality of recreational fishing and experiences; and perceptions of sustainability and economic viability of commercial fishing and aquaculture.

#### *KPI 9 – Trend in ecological and social measures for boating*

This indicator relates to outcome 7A *'Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate'* within Initiative 7 *'Enabling safe and sustainable boating'*.

This indicator measures trends relating to serious injuries and fatalities; hazards to boating; environmental impact of boating; and satisfaction with boating services and experiences. Data is collected through 'Boating incidents in NSW' reporting published by the Centre for Maritime Safety and agency administrative data, the Recreational Boating Participation survey and activities undertaken by the Environmental Services team.

### *KPI 10 – Community and targeted stakeholders demonstrate improved capacity to anticipate and adapt to climate change impacts*

This indicator relates to outcome 3A *'Improved capacity of coastal and marine managers and communities to anticipate climate impacts and identify adaptation pathways'* within Initiative 3 *'Planning for climate change'*. It also relates to the MEMS outcome *'Improved incorporation of the likely impacts of climate change in planning for and managing the marine estate'*.

Measures and baseline results for this indicator will be established through the implementation of Initiative 3's management actions and sub-actions that relate to climate change engagement. It will draw on data and information gathered through feedback surveys of participants in engagement activities, as well as broader insights collected through surveys of staff from responsible and related agencies and other targeted stakeholders.

### *KPI 11 – Economic benefits indicator*

This indicator primarily relates to outcome 8A *'Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW stakeholders and community'*. It also relates to the MEMS outcome *'Enhanced sustainable coastal and marine commercial opportunities in identified regions, and maintained elsewhere'*.

The MEMS recognises that there are trade-offs to consider in the management of the marine estate. Monitoring through KPI 11 will focus on economic measures that are applicable across the marine estate, rather than those related only to specific management initiatives and actions. The purpose of the indicator is to monitor trends rather than undertake a comprehensive evaluation of economic benefits.

KPI 11 monitors the broad (overall) status of economic benefits derived from the marine estate. It is a suite of performance indicators (dashboard indicators) developed to monitor a sub-set of economic benefits as part of the MIMP community well-being indicators. Measures relate to:

- Nature based visitors' expenditure
- Commercial Fishery Gross Value of Production (\$)
- Willingness-to-pay of visiting beaches
- Recreational fishing licenses
- Registered recreational vessels
- Tourism industry employment.

Data against these measures will be obtained from existing Government data and external sources. Other potential additional analysis/methods for this indicator will be explored, including assessing the economic health of the Marine Estate, regional case studies, and producing annual report cards.

### *KPI 12 – Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate*

This indicator relates to long-term outcomes:

- 9A *'Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate'*;
- 9B *'Improved efficiency and effectiveness in managing the marine estate'*; and

- 2C *'Improved coordination, consistency and efficiency in coastal and foreshore planning and management'*.

It also relates to intermediate outcome 1F *'Improved consistency, coordination and integration among responsible agencies'* and the MEMS outcomes *'Improved coordination, transparency, inclusiveness and evidence-based decision-making in managing the marine estate'* and *'Improved efficiency and effectiveness in managing the marine estate'*.

Community and stakeholder satisfaction will be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. These measures are described below. For outcome 2C there will be an additional measure 'Number of downloads/demonstrations of use of best practice tools'.

Data collection will be undertaken through a survey of randomly selected individuals within identified stakeholder categories. The agency, community and stakeholder categories are:

- Responsible and related agencies. Responsible agencies include the marine estate managers from the four MEMA agencies and government departments. Related agencies include other government delivery partners, such as Local Land Services, DPE Water, Crown Lands, Environmental Protection Authority, Natural Resources Access Regulator, Heritage NSW and Local Government Areas. This is collected through the Agency Staff Survey.
- Targeted stakeholders and partners, including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate and researchers. This data is collected through the targeted stakeholder surveys and Sea Country (marine estate) Survey.
- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future. This is collected through the Coastal Residents Survey and Visitors Survey.

### Coordination

Responsible agency staff satisfaction with **coordination** across and within responsible agencies in relation to the marine estate (assess separately for coordination within own organisation and across responsible agencies):

- Coordination is embedded in business-as-usual practice
- Coordination is generally purposeful and productive
- The scale and nature of coordination is generally appropriate to the project, task, issue, etc., and desired outcomes, without creating unnecessary administrative burden

### Consistency

Responsible agency staff satisfaction with **consistency** of decision-making and management actions in relation to the marine estate (assess separately for consistency within own organisation and across responsible agencies):

- relevant plans, priorities, projects, activities, etc, are aligned with the MEMS
- the same or similar decision is likely to be reached regardless of which individual or agency is responsible for making the decision

## Transparency

Responsible agency staff, targeted stakeholder and general community satisfaction with **transparency** of decision-making in relation to the marine estate:

- decision-making processes and responsibilities are documented and accessible (including being clear and easily understood) by a general audience
- decisions, and the reasons for decisions, are clearly communicated to interested or affected stakeholders
- information relating to performance (including fulfilment of responsibilities and achievement of outcomes) is communicated clearly and in a timely manner

## Inclusiveness

Responsible agency staff, targeted stakeholder and general community satisfaction with **inclusiveness** of decision-making and management actions in relation to the marine estate:

- There are opportunities for all relevant stakeholders to participate and equally engage in decision-making processes and outcomes
- Stakeholders have clear understanding of the extent to which they can contribute to or influence decision-making
- Engagement activities and information provided allows informed and meaningful participation for all relevant stakeholders
- Stakeholders' views are respected and considered

### *KPI 13 – Community members report awareness and appreciation of the significance of Sea Country values*

This indicator relates to long-term outcome 4D *'The broader NSW community has a greater appreciation of the significance of Sea Country for Aboriginal people'* and intermediate outcome 4G *'Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate'* within Initiative 4 *'Protecting the Aboriginal cultural values of the marine estate'*.

The indicator is measured based on the proportion of survey participants reporting awareness and appreciation captured through the Coastal Residents Survey and Visitors Survey. Data collection will be undertaken through a survey of randomly selected participants from the general community.

### *KPI 14 – Agency staff report using decision-making and approvals processes for foreshore and coastal land use management, design and development that balances social and economic benefits with enhancing coastal and marine habitats*

This indicator relates to outcome 2A *'Improved design and management of foreshore and coastal land use and development, balancing social and economic benefits of development with enhanced coastal and marine habitat'* within Initiative 2 *'Delivering healthy coastal habitats with sustainable use and development'*. It also relates to the MEMS outcome *'Increased appropriateness of the built environment with reduced risk to the marine estate'*.

Data for measuring against this indicator will be collected through an agency staff survey and will capture the proportion of respondents who report using relevant processes. The specific decision-

making and approvals processes that are relevant to this indicator are those relating to foreshore development and use, coastal floodplain and infrastructure management and other relevant coastal systems. Staff to be surveyed include those from DPE-P, NRAR, Crown Lands and others with their roles and responsibilities as outlined in the domestic waterfront structures strategy, marine vegetation strategies, coastal floodplain assessments, and drainage management plans.

#### *KPI 15 - Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders*

This indicator relates to long-term outcomes 1D 'Improved adoption of best practice land management and compliance with rules and regulations for managing water pollution and litter' within Initiative 1 'To improve water quality and reduce marine litter for the benefit of marine habitats, wildlife and the community', and 8B 'Increased stakeholder and community adoption of safe and sustainable use of the marine estate' within Initiative 8 'Enhancing social, cultural and economic benefits'. It also relates to intermediate outcome 2E 'Increased adoption of best practice design and management of foreshore and coastal planning, development and use' within Initiative 2 'Delivering healthy coastal habitats with sustainable use and development', and the MEMS outcome 'Increased appropriateness of the built environment with reduced risk to the marine estate'.

The indicator is measured through Coastal Residents Survey and Visitors Survey using questions to elicit the prevalence of use of best practice approaches and processes. The relevant best practice approaches and processes vary by outcome, reflecting the focus of each initiative.

In Initiative 8, best practice approaches and processes are those relating to the disposal of rubbish, use of fertiliser and garden chemicals, rules and guidelines to minimise disturbance to coastal and marine wildlife, and rules for recreational fishing and recreational boating. Targeted stakeholders include the general community.

In Initiative 1, best practice approaches and processes relate to the Diffuse Source Water Pollution Strategy, Oyster Reef Restoration Implementation Guidelines, fertiliser management, Blueberry Nutrition Guidelines, macadamia nut nutrient replacement, farm water and nutrient management, erosion mitigation practices, coastal wetland rehabilitation, and the Risk-based framework. Targeted stakeholders include agricultural industries, the construction industry, landholders / participants in on-ground works, and councils.

In Initiative 2, best practice approaches and processes relate the adoption into council/related stakeholder processes, the Risk-based Framework, and estuary specific strategies. Targeted stakeholders include responsible and related agencies.

#### *KPI 16 – Responsible and related agencies report satisfaction with efficiency and effectiveness governance of the marine estate*

This indicator relates to outcome 9B 'Improved efficiency and effectiveness in managing the marine estate' within Initiative 9 'Delivering effective governance', and outcome 2C 'Improved coordination, consistency and efficiency in coastal and foreshore planning and management' within Initiative 2 'Delivering healthy coastal habitats with sustainable use and development.' It also relates to the MEMS outcome 'Improved efficiency and effectiveness in managing the marine estate.'

Stakeholder satisfaction will be assessed through the following measures (assessed separately for consistency within own organisation and across responsible agencies):

- allocation of resources, including staff and funding, across management of the marine estate is clearly directed towards identified outcomes
- systems, processes, skills, knowledge, and governance and administrative arrangements allow organisations and individuals to deliver their responsibilities efficiently and effectively, with minimal duplication, unreasonable delays, or unnecessary activities
- responsible agencies are achieving, or on track to achieve, identified outcomes within budget

Data collection will be undertaken through the Agency Staff Survey of randomly selected individuals from responsible and related agencies, including marine estate managers from relevant government departments, agencies, statutory authorities and local government.

#### *KPI 17 – Risk rating to threatened and protected species in the NSW marine estate*

This indicator relates to outcome 5A '*Reduced threats to threatened and protected marine species in NSW*' within Initiative 5 '*To understand and mitigate threats to threatened and protected species in NSW*'.

This indicator will be measured through a comparison of risk rating results from the scheduled five-yearly reviews of the Threat and Risk Assessment (TARA) with the original TARA in relation to threatened and protected species. A maintained or reduced risk rating will be considered a success, regardless of the future level of risk. The risk rating results will be accompanied by a narrative to explain the basis for the risk rating.

#### *KPI 18 – Community reports satisfaction with the health of their local waterways*

This indicator relates to Outcome 1A '*Waterway health in the marine estate aligns with community values*' within Initiative 1 '*To improve water quality and reduce marine litter for the benefit of marine habitats, wildlife and the community*'.

Community satisfaction with their local waterways is intended to be measured through the Water Quality Objectives Survey. The survey was developed as part of a management action within Initiative 1 and may be repeated in the future, depending on whether funding can be secured to do so. While the survey captures a range of insights, this indicator will draw on results from the question asking respondents to rate their satisfaction with the health of waterway(s) in their local area (% reporting "satisfied" or "highly satisfied").

#### *KPI 19 - Reduction in TARA risk levels relating to Aboriginal cultural heritage and use*

This indicator relates to long-term outcome 4B '*Reduced threats to Aboriginal cultural heritage and use in the marine estate*' within Initiative 4 '*Protecting the Aboriginal cultural values of the marine estate*'.

This indicator will be measured through a comparison of risk rating results from the scheduled five-yearly reviews of the Threat and Risk Assessment (TARA) with the original TARA in relation to Aboriginal cultural heritage and use in the marine estate. A reduced risk rating will be considered a success, regardless of the future level of risk. The risk rating results will be accompanied by a narrative to explain the basis for the risk rating.

#### *Alignment of KPIs and MEMS outcomes*

Selected KPIs will be used as indicators for the overarching MEMS outcomes. The alignment of relevant KPIs to the overarching MEMS outcomes is shown below (Figure 7).

OVERARCHING MEMS OUTCOMES	ALIGNED KPIS
Enhanced condition of the marine estate, including its habitats, wildlife and natural beauty, in identified regions and maintained elsewhere	Waterway health supports community values and uses (KPI 1) Reduction in litter in the marine and estuarine environments in targeted regions (KPI 2) Biodiversity and habitat indicator (KPI 4) NSW contribution to national body of knowledge, approaches and plans for conservation of targeted threatened and protected species (KPI 5)
Improved incorporation of the likely impacts of climate change in planning for and managing the marine estate	Community and targeted stakeholders demonstrate improved capacity to anticipate and adapt to climate change impacts (KPI 10)
Increased appropriateness of the built environment with reduced risk to the marine estate	Agency staff report using decision-making and approvals processes for foreshore and coastal land use management, design and development that balances social and economic benefits with enhancing coastal and marine habitats (KPI 14) Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders (KPI 15)
A healthy and thriving Sea Country supports improved wellbeing for Aboriginal communities	Aboriginal people report satisfaction with Sea Country management (KPI 6) Aboriginal employment and opportunities in relation to the marine estate (KPI 7)
Greater community appreciation and enhanced sustainable experiences of the marine estate in identified regions, and maintained elsewhere	Community wellbeing indicator (KPI 3)
Enhanced sustainable coastal and marine commercial opportunities in identified regions, and maintained elsewhere	Economics benefits indicator (KPI 11)
Improved coordination, transparency, inclusiveness and evidence-based decision-making in managing the marine estate	Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (KPI 12)
Improved efficiency and effectiveness in managing the marine estate	

Figure 7 KPIS aligned with overarching MEMS outcomes

#### 4.2.4. Monitoring condition and trend of community benefits and environmental assets

##### *Monitoring community benefits*

Systematic monitoring of human dimensions of the NSW marine estate is novel. As such, a 'community wellbeing framework' has been developed to address the critical knowledge gap relating to social, cultural and economic information, which was identified in the TARA, and allow for a co-

ordinated and robust approach to monitoring trends and impacts to human dimensions of the marine estate. MEMA defines community wellbeing as the overall aggregate of economic, social, cultural and environmental benefits (NSW Marine Estate and Management Authority, 2015).

The framework captures and builds upon relevant LIs and KPIs identified for objective 2 of the MIMP (management effectiveness) by identifying and filling gaps relevant to objective 1 and 3 of the MIMP (i.e., monitoring community benefits and filling knowledge gaps). While the framework is designed to comprehensively capture all relevant human dimensions of the marine estate that could be monitored, prioritisation of components will also be undertaken to allow for strategic monitoring by MEMA agencies within available resources.

### *Broad-scale monitoring of environmental assets*

Broad-scale environmental monitoring will focus on water quality, biodiversity and habitats, and threatened and protected species indicators. These are the key components of the environmental assets of the marine estate in which risks were assessed. Given the statewide extent of these assets, they will be reported in different ways and at different geographic, taxonomic and temporal scales. It will also include characterisation of natural variations in the patterns of a number of biological and physical attributes in order that changes influenced by management actions can be detected. Variation in human impacts adds extra complexity to the difficult task of assessing variable marine environments, as impacts may be episodic (short-lived) or sustained (long-term), occur over a range of spatial scales (metres to 100s km), and affect ecosystems in ways that are difficult to predict or detect over and above natural variability. As such, understanding the range of natural variation is a key priority for broad-scale monitoring.

The existing DPE-EHG long term water quality monitoring program provides a key broad-scale environmental dataset on water quality condition and pressures. The program identifies trends, issues and risks to water quality condition, targeting both short- and long-term responses to pressures on water quality. Key indicators of ecological health reflect the response of a waterway to long-term changes in pressure and threats. Throughout the implementation of the MEMS, water quality monitoring will be ongoing and the data generated will inform the relevant key performance indicators and leading indicators in this Framework.

A second key set of environmental assets to be monitored are categorised as aquatic macrophytes (seagrass, mangroves and saltmarsh). This will occur principally through regular analysis of aerial imagery. Seagrass mapping will be focused on those estuaries containing endangered seagrass communities, with other species also mapped in the lower reaches of estuaries. Mangroves and saltmarshes will also be mapped to examine whether mangroves are displacing saltmarshes in the most heavily disturbed NSW estuaries. A range of attributes of aquatic macrophytes will be calculated and compared over time and among estuary types to monitor extent and the amount of change through time.

Other broad-scale monitoring will be developed during further stages of the MEMS, including the assessment and monitoring of estuarine and rocky reef fish assemblages. The estuarine fish developing indicator will be progressed based on available funding and progression of relevant methods to allow robust and cost-effective monitoring. Further targeted monitoring of specific stressors identified to be resulting on moderate and high risks to environmental assets are also expected to be developed.

## 4.2.5. Addressing knowledge gaps

The need to fill key social, cultural and economic knowledge gaps identified in the state-wide TARA is captured through multiple outcomes across various management initiatives. These outcomes include:

- *Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G);*
- *Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible and related agencies (2H);*
- *Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (2I);*
- *Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B);*
- *Improved knowledge of the likely future impacts of climate change on environmental values related to key components of the marine estate (3C); and*
- *Improved information base on human dimensions of the marine estate relevant to management (8D).*

Progress in filling knowledge gaps will be monitored via LI3 '*Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches*', with progress measured through the number of knowledge gaps with status changing from 'inferred' to 'adequate'. There are also additional indicators and measures that are specific to each outcome that will be used to assess the development, dissemination and application of new knowledge.

In order to address key knowledge gaps relating to environmental assets, specific projects will be developed that will range from desktop analysis, targeted field surveys and/or laboratory experiments. This is expected to include further analysis of the extent and distribution of stressors, and studies to better understand how these interact with environmental assets. The new knowledge will be incorporated into updated background reports and be reflected in improved certainty in the reporting of condition and trends.

This work will be progressed through a network of organisations that use or generate monitoring data or reporting products, and these will be engaged in the development and implementation of projects that address knowledge gaps. This includes marine management agencies, universities, local government, consultants, and the local community who will be encouraged to participate to ensure effective monitoring. However, it is important to coordinate this effort as the time and resources required for effective research are considerable, and this will be reviewed annually.

## 4.3. Evaluation

### 4.3.1. Evaluation questions

The evaluator will use the evaluation questions to guide data gathering and analysis, and to identify insights into achievements to date and areas for future improvement. The evaluation questions align with each type of evaluation and the main components of the program logic. The KEQs draw on multiple lines of evidence and capture standard evaluation themes of appropriateness, efficiency,

effectiveness and sustainability, which align with the NSW Government Program Evaluation Guidelines (NSW Government, 2018). The themes are useful for guiding the evaluation and for reporting summary findings.

The evaluation questions, rationale and related evaluation theme are provided below for each component of the program logic (Table 4, Table 5 and Table 6). Detailed guidance on data types, sources and collection for each evaluation question is provided in Appendix B.'

Table 4 Key evaluation questions and rationale - *context and basis*

Key evaluation questions	Rationale	Evaluation theme
What was the rationale and intent of the initiative?	<ul style="list-style-type: none"> <li>• Captures the basis and broad rationale for investment</li> </ul>	Appropriateness
<p>How has the policy context changed since the initiative was developed?</p> <p><i>Consider:</i></p> <ul style="list-style-type: none"> <li>• <i>Policy and management context</i></li> <li>• <i>Community expectations</i></li> </ul>	<ul style="list-style-type: none"> <li>• Captures any changes in the broader context, which may affect current or future areas of focus and implementation.</li> <li>• Allows consideration of whether the original basis for the initiative is still applicable, and whether any revision or amendments may be required to ensure ongoing relevance of the initiative.</li> </ul>	Appropriateness
How has understanding of marine estate environments and issues evolved since the initiative commenced?		Appropriateness

Table 5 Key evaluation questions and rationale - *process and evaluation*

Key evaluation questions	Rationale	Evaluation theme
<p>Were management actions completed and outputs achieved, within budget, scope and timeframes?</p> <p>Why or why not?</p> <p><i>Consider:</i></p> <ul style="list-style-type: none"> <li>• <i>Were budget, scope and timeframes appropriate for the intended management actions and outputs?</i></li> <li>• <i>Are management actions and outputs still considered the right areas for investment?</i></li> <li>• <i>What could be done differently?</i></li> </ul>	<ul style="list-style-type: none"> <li>• Captures progress towards implementation of management actions and delivery of outputs.</li> <li>• Captures unforeseen risks to delivery, which may inform improved future planning.</li> <li>• Considers whether the existing management actions and outputs remain the most appropriate, efficient and effective way to achieve outcomes.</li> <li>• Helps to understand what is working, what's not working, and what may need attention to ensure ongoing and future success.</li> </ul>	Appropriateness, efficiency, effectiveness

Key evaluation questions	Rationale	Evaluation theme
<ul style="list-style-type: none"> <li>• <i>Has implementation been influenced by external factors?</i></li> <li>• <i>Have costs of implementation been influenced by external factors?</i></li> <li>• <i>To what extent have completed management actions and outputs contributed towards outcomes?</i></li> </ul>		
<p>Was implementation constrained in any way by inputs? Why or why not?</p> <p>Consider:</p> <ul style="list-style-type: none"> <li>• <i>Funding</i></li> <li>• <i>Resources</i></li> <li>• <i>Involvement of stakeholders</i></li> <li>• <i>Partnerships or agreements</i></li> </ul>	<ul style="list-style-type: none"> <li>• Provides insights into why elements of the initiative may or may not have been successfully implemented.</li> <li>• Contributes to understanding any barriers to successful implementation and identifies areas that may need attention to ensure success in the future.</li> </ul>	Appropriateness, efficiency

Table 6 Key evaluation questions and rationale - *outcome evaluation*

Key evaluation questions	Rationale	Evaluation theme
<p>To what extent have outcomes been achieved? Why / why not?</p> <p>Consider:</p> <ul style="list-style-type: none"> <li>• <i>What trends have been identified through indicators?</i></li> <li>• <i>Were management actions/outputs targeted effectively towards achieving outcomes?</i></li> <li>• <i>Was achievement of outcomes influenced by external factors?</i></li> </ul>	<ul style="list-style-type: none"> <li>• Assesses success of initiative implementation for delivering benefit to marine estate and NSW community.</li> <li>• Helps to understand what is working, what's not working, and what may need attention to ensure ongoing and future success.</li> <li>• Identifies unexpected risks that impacted success, some of which may be better managed in the future.</li> </ul>	Effectiveness

Key evaluation questions	Rationale	Evaluation theme
<p>Has the initiative produced any positive or negative unintended or unexpected outcomes?</p> <p>Why/why not?</p> <p><i>Consider (for example):</i></p> <ul style="list-style-type: none"> <li>• <i>Community and cultural: safety, access, relationships and interactions, employment, attitudes and behaviour, physical and mental health</i></li> <li>• <i>Economic: industry structure, industry expansion/contraction, business/industry practices, goods/services prices</i></li> <li>• <i>Environment: species population growth/decline, species/individual health and safety, greenhouse gas emissions, soil/water/air pollution, ecosystem disruption</i></li> <li>• <i>Responsible agencies: administrative burden, indicator fixation, restricted focus, misinterpretation, gaming the system</i></li> </ul>	<ul style="list-style-type: none"> <li>• Helps to understand what is working, what's not working, and what may need attention to ensure ongoing and future success.</li> <li>• Helps to identify issues for management, either through additional action or changes to program design or implementation</li> </ul>	<p>Appropriateness</p>
<p>Are outcomes and indicators appropriate to the identified need?</p> <p>Why/why not?</p> <p><i>Consider:</i></p> <ul style="list-style-type: none"> <li>• <i>Were outcomes and indicators effectively aligned with the original identified need?</i></li> <li>• <i>Are outcomes and indicators still relevant given any changes in the broader context?</i></li> <li>• <i>Do / did indicators provide sufficient and appropriate signal for progress towards outcomes and/or any emerging risks?</i></li> <li>• <i>Is / was data collection against indicators achievable?</i></li> </ul>	<ul style="list-style-type: none"> <li>• Identifies whether outcomes represented the right areas of focus initially, whether these remain the right areas of focus, and what (if any) changes should be made.</li> <li>• Identifies whether indicators represent the right signal for outcomes, whether these remain appropriate, and what (if any) changes should be made</li> </ul>	<p>Appropriateness</p>

Key evaluation questions	Rationale	Evaluation theme
<p>What insights are there for ensuring achieved outcomes are maintained in the future?</p> <p><i>Consider:</i></p> <ul style="list-style-type: none"> <li>• Are impacts likely to endure through subsequent planning timeframes?</li> <li>• How should management responsibilities be assigned?</li> </ul>	<ul style="list-style-type: none"> <li>• Identifies actions required (if any) to ensure initiative leaves a positive and enduring impact.</li> </ul>	Sustainability

Table 7 Key evaluation questions and rationale - *economic evaluation*

Key evaluation questions	Rationale	Evaluation theme
<p>Have outcomes been achieved efficiently?</p> <p>Why/why not?</p> <p><i>Consider:</i></p> <ul style="list-style-type: none"> <li>• What were the initiative's implementation costs?</li> <li>• What are, or were, the initiative's expected, or achieved, net benefits in monetary terms? (Note: a cost-benefit analysis (CBA) is required to answer this question. Undertaking CBA for a program of this scale would be a significant task and should be carefully considered.)</li> <li>• What are the key drivers of costs/benefits?</li> <li>• How do the costs compare with other programs targeting the same need or issue?</li> <li>• Could similar or greater benefits have been achieved through different actions?</li> </ul>	<ul style="list-style-type: none"> <li>• Identifies, measures and values a program's costs and benefits in monetary terms for economic, social and environmental domains across time for a designated community.</li> <li>• Provides a consistent basis for informing decision making about resource allocation and comparison of alternative options</li> <li>• Assesses success of initiative implementation for delivering benefit in monetary terms to marine estate and NSW community.</li> <li>• Helps identify opportunities for improving efficiency</li> </ul>	Efficiency and effectiveness

Key evaluation questions	Rationale	Evaluation theme
<ul style="list-style-type: none"> <li>• <i>Can resources be allocated more efficiently?</i></li> <li>• <i>Is the return on expenditure adequate to justify ongoing investment in the program?</i></li> </ul>		

### 4.3.2. Evaluation stages and method

A longitudinal approach to evaluation builds the performance story over time. Ideally, this would include the following stages:

- **Baseline / formative evaluation** should review the context, basis and processes for the MEMS, enable MIMP to gather important baseline data (where not yet available) and establish targets. It is also an opportunity to review the current suite of indicators and measures and update if required. The formative evaluation should be undertaken during the early stage of implementation.
- **Mid-term evaluation** of the MEMS will occur through a five-year health check. The five-year health check is an established part of the MEMS and will: review and communicate the progress of implementation of the MEMS; respond to research and monitoring outputs; and consider new evidence and emerging threats that need a management response. The five-year health check will include a mid-term review of the state-wide TARA, which will assess whether the risk of threats identified in the 2017 TARA have changed.
- **Summative evaluation** will allow MEMA agencies to make a final assessment of implementation and understand the implications for future strategies. This evaluation is outcome-focused and provides insights into unintended outcomes and lessons for improvement. The final assessment of implementation could also identify areas for improvement to inform future planning, either in subsequent stages of the current MEMS or in future strategies. To develop a case for continued government intervention beyond the current 10-year strategy, an economic evaluation would be required (ex-post CBA) for a business case to assess if the program would provide value for money and supports efficient and effective resource allocation.

Given the MEMS is in early stages of implementation, evaluation across all three of above evaluations stages will be relevant. Evaluation at each stage will be undertaken by a suitably qualified evaluator. The evaluation method is outlined below (Table 8).

Table 8 Evaluation method

Stage	Baseline / formative evaluation
Timeframe	2020 (during MEMS Stage 1)
Purpose	Review context and basis for the MEMS and each initiative, evaluate processes for delivery, establish baseline data against which to measure future progress and establish targets, evaluate initial progress towards outcomes
Evaluation activities	<ul style="list-style-type: none"> <li>• Review context and basis for investment</li> <li>• Review baseline data, and establish targets, if desired</li> <li>• Review indicators</li> <li>• Assess progress against inputs, management actions and outputs (process evaluation)</li> <li>• Assess achievement of short-term outcomes and progress towards intermediate outcomes (outcome evaluation)</li> <li>• Prepare formative evaluation report</li> </ul>
Stage	Mid-term evaluation (five-year health check)

Timeframe	2023
Purpose	Evaluate implementation of management actions and progress towards MEMS and initiative outcomes. Identify any changes that may need to be made to ensure the MEMS achieves the intended outcomes.
Evaluation activities	<ul style="list-style-type: none"> <li>• Review context and basis of investment, with a focus on identifying any changes since the formative evaluation</li> <li>• Update progress against inputs, management actions and outputs (process evaluation)</li> <li>• Assess and document achievement of intermediate outcomes and progress towards long-term outcomes (outcome evaluation)</li> <li>• Incorporate overall findings from project-level evaluations</li> <li>• Capture any insights and feedback that provide supporting evidence for why MEMS performance may (or may not) be as expected</li> <li>• Assess assumptions</li> <li>• Assess efficiency and effectiveness of program to date (economic evaluation)</li> <li>• Identify and consider any areas that may need attention to ensure the MEMS achieves intended outcomes</li> <li>• Produce interim evaluation report and recommendations (five-year health check report)</li> </ul>
Stage	Summative evaluation
Timeframe	2027-2028
Purpose	Evaluate achievement of outcomes, review delivery of management actions and outputs, reflect on overall implementation of the MEMS and initiatives, document lessons learnt and insights to inform future planning, and communicate performance
Evaluation activities	<ul style="list-style-type: none"> <li>• Review context and basis of investment, with a focus on identifying any changes since the MEMS commenced</li> <li>• Final review of delivery (process evaluation)</li> <li>• Assess achievement of long-term outcomes (outcome evaluation)</li> <li>• Assess assumptions</li> <li>• Assess overall efficiency and effectiveness of program (economic evaluation)</li> <li>• Identify lessons or insights to inform future planning</li> <li>• Produce evaluation report</li> </ul>

### 4.3.3. Evaluation documentation

The evaluator should document findings from each evaluation stage in a clear and accessible evaluation report. The report should contain an executive summary that can be used as a standalone document and is appropriate for the Minister(s) and the general public. The main body of the report should contain detail for MEMA and responsible agencies to help understand progress, success and

areas for improvement. Both components should be publicly available. A summary of reporting requirements is provided below (Table 9).

Table 9 Summary of evaluation reporting requirements

Report section	Content
Executive summary	Summary of policy context, evaluation context, approach, findings and recommendations, framed for the Minister(s) or public audience
Introduction and context	Summary of policy and environmental context Summary of the context for the evaluation Document the evaluator and their relationship with MEMA and MEMS
Evaluation method, design and data	Outline the evaluation method, KEQs, and data types and sources
Key findings	Synthesis of findings for each KEQ Identify areas for improvement to inform future planning, either in subsequent stages of the current MEMS or in future strategies
Recommendations	Conclusions and recommendations for future system monitoring and planning
Appendices	All collated and reviewed findings against each KEQ

## 4.4. Reporting

The report card will be prepared through the MIMP, with contribution from partner agencies where relevant and in alignment with their responsibilities for data collection and provision through monitoring and evaluation. The report card will contain the critical elements and reflect the draft structure shown below (Figure 8).

### 4.4.1. Reporting frequency

The first report card will be prepared in 2020 and will be updated annually in alignment with annual reporting processes through the MIMP. Although updated annually, not all critical elements will be reported on at this frequency. In general, specific content will be reported on at the following frequencies:

- Action status and supporting narratives will be reported on annually.
- Short-term and intermediate outcomes will be reported on at the end of year 2 and year 5; long-term outcomes will be reported on at the end of year 5 and year 10.
- Reporting against indicators (both KPIs and LIs) will reflect data collection frequency for the specific indicator, with a maximum frequency of reporting annually.
- Summaries of evaluation findings will be reported when available.

- A selection of case studies will be identified and reported annually. The number of case studies may vary from year to year, depending on what has been achieved or progressed in that year and is appropriate for reporting.

There will be some critical elements that can't be reported, or fully reported, against initially. These should still be included in the early report cards along with commentary indicating that these will be reported against in the future.

#### 4.4.2. Reporting platform

It is recommended that an early decision be made about the platform for the first report card, and whether a different platform should be explored for future report cards. The critical elements of the report card and draft structure could initially be reflected in a traditional report format and may be used as the basis for designing a more interactive web platform in the future (pending funding availability). The report card should be available for download through the NSW marine estate website.

#### 4.4.3. Case studies

Case studies will be used to support reporting on management action delivery. When used appropriately, case studies can provide an effective way to communicate progress, success and lessons. Case studies used in the report card should:

- be interesting to the audience,
- directly align with the MEMS,
- be consistent with monitoring and evaluation findings,
- enable adaptive management, and
- be scientifically defensible.

Case studies are likely to evolve over time and will be considered against the criteria above before being included in the report card.

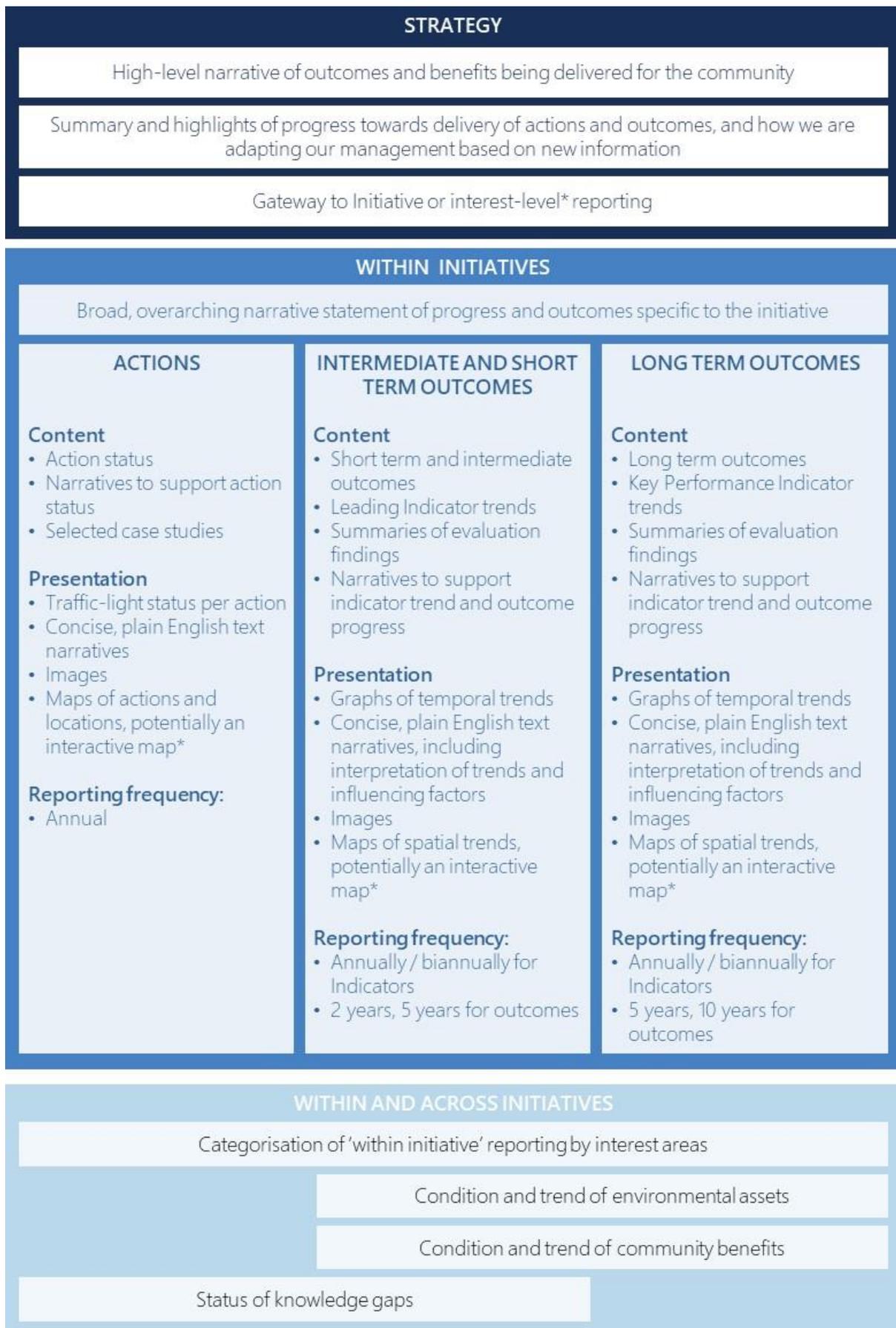


Figure 8 Critical elements and draft structure for the report card

## 5. Benefit Realisation

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Benefits Realisation Management refers to identifying, planning, managing and evaluating intended benefits of an investment. It is undertaken through the following broad steps (NSW Department of Finance, Services and Innovation, 2018):

1. Understand
2. Plan
3. Manage and report
4. Evaluate

The first two steps are addressed in the MEMS business case (NSW Department of Primary Industries, 2018), the MEMS (NSW Marine Estate Management Authority, 2018) and the MEMS Implementation Plan (in development). Steps 3 and 4 are captured through this Framework. Collectively, the business case, the MEMS, the implementation plan and this framework align with the principles set out in the NSW Benefits Realisation Framework (NSW Department of Finance, Services and Innovation, 2018).

The MEMS business case (NSW Department of Primary Industries, 2018) identified a number of benefits across six types of stakeholder categories that can be expected to be delivered through implementation of the strategy initiatives. These are shown below (Figure 9). The benefits are mixed in terms of likely timeframes, alignment with management initiatives, and whether they reflect an outcome or an output. As such, they were considered in development of the outcomes articulated in the program logics but the alignment between outcomes and benefits may be characterised by one of the following relationships:

- outcome(s) directly align with or capture the benefit
- outcome(s) contribute towards achieving the benefit
- outcome(s) may result from the identified benefit.

Benefits were considered in the context of their stakeholder category and the outcomes mapped to reflect the focus of the category. The benefits and their aligned outcomes are provided in Appendix C.



Source: NSW Department of Industries 2018, Marine Estate Management Strategy - Business Case - Part A.

Figure 9 Stakeholder benefits identified in the business case

## 6. Reviewing the Monitoring and Evaluation Framework

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This Framework, in particular the monitoring plans in Appendix A, is a live document. Some details, particularly in refining the scope of identified indicators, will be further developed during implementation of the MEMS.

The Monitoring and Evaluation Framework will be reviewed periodically in alignment with evaluation processes set out in Section 4.3. The evaluations will include consideration of the evaluation questions that relate specifically to this Framework, shown below (Table 10).

Table 10 Key evaluation questions and rationale to inform review of this Framework

Key evaluation questions	Rationale
<p>Are outcomes and indicators appropriate to the identified need?</p> <p>Why/why not?</p> <p><i>Consider:</i></p> <ul style="list-style-type: none"> <li>• <i>Were outcomes and indicators effectively aligned with the original identified need?</i></li> <li>• <i>Are outcomes and indicators still relevant given any changes in the broader context?</i></li> <li>• <i>Do / did indicators provide sufficient and appropriate signal for progress towards outcomes and/or any emerging risks?</i></li> <li>• <i>Is / was data collection against indicators achievable?</i></li> </ul>	<ul style="list-style-type: none"> <li>• Identifies whether outcomes represented the right areas of focus initially, whether these remain the right areas of focus, and what (if any) changes should be made.</li> <li>• Identifies whether indicators represent the right signal for outcomes, whether these remain appropriate, and what (if any) changes should be made</li> </ul>

The Monitoring and Evaluation Framework will be updated if and where required based on findings of the periodic evaluations. The review should also consider whether effective application of the Framework is constrained in any way by ongoing funding arrangements and, if so, provide recommendations for responding to these constraints.

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# Appendix A – Initiative monitoring plans

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Monitoring plans, including program logics, are provided for each initiative, below. These should be read alongside sections 3.2, 3.3 and 4.2, and Appendix B. The monitoring plans, like the Monitoring and Evaluation Framework broadly, are live plans. The plans were originally prepared in 2019 and updated in 2021. Some details in the plans are still in development.

Monitoring plans for each initiative show the short-term, intermediate, and long-term outcomes for each initiative and identifies their respective KPIs and LIs. Importantly, the indicators in this Framework link to outcomes, not management actions.

The plans use a matrix to map management actions to the short-term and intermediate outcomes that each is expected to most strongly contribute towards achieving. All management actions in each initiative are expected to collectively contribute to the long-term outcomes.

The plans document detailed requirements for each indicator linked to outcomes within that initiative, including specifications, measures, data sources, collection frequency, lead agency and assumptions. There are common indicators and common data collection processes across the initiatives. These will be approached in a coordinated and efficient manner.

## Initiative 1 - Improving water quality and reducing litter

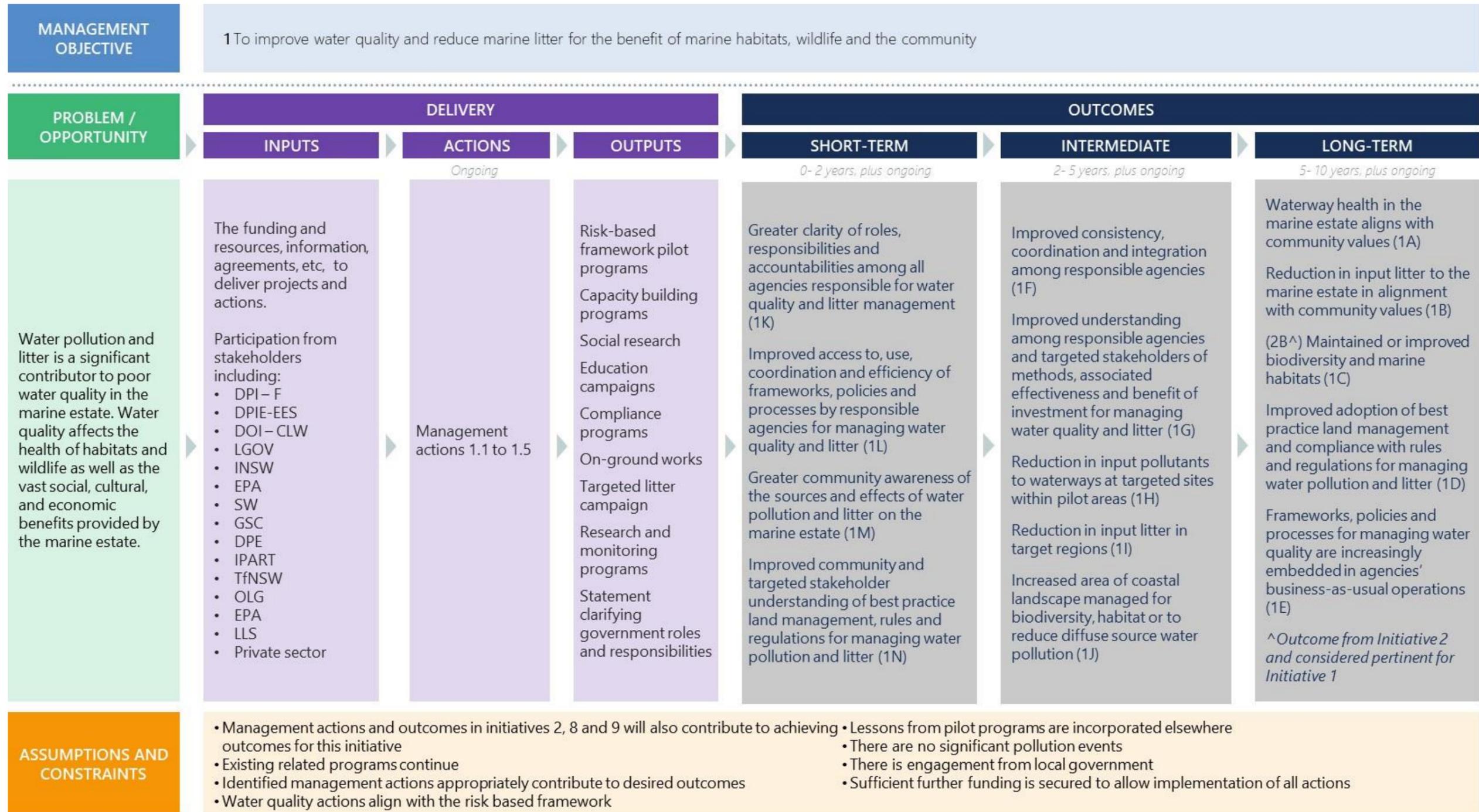


Figure 10 Program logic for Initiative 1

OUTCOME CODE	1N	1M	1L	1K	1J	1I	1H	1G	1F	1E	1D	1C	1B	1A
OUTCOME	Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter	Greater community awareness of the sources and effects of water pollution and litter on the marine estate	Improved access to, use, coordination and efficiency of frameworks, policies and processes by responsible agencies for managing water quality and litter	Greater clarity of roles, responsibilities and accountabilities among all agencies responsible for water quality and litter management	Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution	Reduction in input litter in target regions	Reduction in input pollutants to waterways at targeted sites within pilot areas	Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter	Improved consistency, coordination and integration among responsible agencies	Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations	Improved adoption of best practice land management and compliance with rules and regulations for managing water pollution and litter	(2B) Maintained or improved biodiversity and marine habitats	Reduction in input litter to the marine estate in alignment with community values	Waterway health in the marine estate aligns with community values
OUTCOME TIMEFRAME	Short-term	Short-term	Short-term	Short-term	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Long-term	Long-term	Long-term	Long-term	Long-term
OUTCOME INDICATORS	LI 21	LI 10	LI 2, LI 11	LI 5	LI 4, LI 28	KPI 2	LI 1	LI 2, LI 3, LI 11	KPI 12, LI 2, LI 5	LI 2, LI 5, LI 11	KPI 15, LI 12	KPI 4	KPI 2	KPI 1, KPI 18

MANAGEMENT ACTIONS														
1.1	LI 21		LI 2, LI 11				LI 1		KPI 12, LI 2, LI 5	LI 2, LI 5, LI 11	KPI 15, LI 12	KPI 4	KPI 2	KPI 1, KPI 18
1.2												KPI 4	KPI 2	KPI 1, KPI 18
1.2 (a)			LI 2, LI 11	LI 5				LI 2, LI 3, LI 11	KPI 12, LI 2, LI 5	LI 2, LI 5, LI 11		KPI 4	KPI 2	KPI 1, KPI 18
1.2 (b)			LI 2, LI 11					LI 2, LI 3, LI 11		LI 2, LI 5, LI 11		KPI 4	KPI 2	KPI 1, KPI 18
1.2 (c)			LI 2, LI 11	LI 5						LI 2, LI 5, LI 11		KPI 4	KPI 2	KPI 1, KPI 18
1.2 (d)	LI 21	LI 10						LI 2, LI 3, LI 11			KPI 15, LI 12	KPI 4	KPI 2	KPI 1, KPI 18
1.3		LI 10			LI 4, LI 28		LI 1				KPI 15, LI 12	KPI 4	KPI 2	KPI 1, KPI 18
1.4	LI 21	LI 10		LI 5		KPI 2						KPI 4	KPI 2	KPI 1, KPI 18
1.5						KPI 2		LI 2, LI 3, LI 11	KPI 12, LI 2, LI 5			KPI 4	KPI 2	KPI 1, KPI 18

Figure 11 Action - outcome map for Initiative 1

Table 11 Indicators and associated details for short-term outcomes for Initiative 1

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)	LI 21: Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	<p>Survey questions to be developed in conjunction with the Stakeholder Survey Coordinator.</p> <p>Relevant best practice land management, rules and regulations include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Fertiliser management</li> <li>- Blueberry nutrition guidelines</li> <li>- Macadamia nut nutrient replacement</li> <li>- Farm water and nutrient management</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- NSW Water Quality Objectives</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Councils</li> <li>- Key agricultural stakeholders (i.e. blueberry and macadamia farmers, oyster, other)</li> <li>- Recreational fishers</li> <li>- Agronomists</li> <li>- General community</li> </ul>	Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations	Initiative lead(s), in conjunction with: - DPI-F (Initiative 8 lead) - Community - Stakeholder Survey Coordinator	Coastal Residents Survey and Visitors Survey  Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	
			Number of participants in workshops, webinars, eLearning or other relevant education events who report improved understanding of relevant best practice land management, rules and regulations	Initiative lead(s), or nominated delegate(s)	Event-based surveys	Documented opportunistically as events and surveys completed, collated annually	Pre- and post-event surveys target stakeholders on a project level.
Greater community awareness of the sources and effects of water pollution and litter on the marine estate (1M)	LI 10: Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate		Proportion of survey respondents demonstrating awareness threats and benefits (community)	Initiative lead(s), in conjunction with: - DPI-F (Initiative 8 lead) - Community - Water quality objectives survey co-ordinator  Initiative lead(s) Relevant action lead(s)	Coastal Residents Survey and Visitors Survey  NSW Water Quality Objectives Survey	RRVS: Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).  Water Quality Objectives Survey: 2021 with potential for repeated surveys or survey questions.	
			Proportion of survey respondents demonstrating awareness of potential threats from their industry (targeted stakeholders)	Stakeholder survey coordinator  Initiative lead(s)	Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		<p>Includes threats relating to:</p> <ul style="list-style-type: none"> <li>- sources and effects of water pollution and litter in the marine estate</li> <li>- coastal floodplain water quality</li> </ul> <p>Includes benefits relating to:</p> <ul style="list-style-type: none"> <li>- Waterways in the marine estate</li> <li>- changing land use practices within coastal floodplains and landscapes.</li> <li>- marine litter campaign</li> <li>- NSW Water Quality Objectives</li> </ul> <p>Targeted action-based stakeholders include:</p> <ul style="list-style-type: none"> <li>- 1.2.9, 1.2.13, 1.2.10 Council staff, construction industry, etc;</li> <li>- 1.2.11 Specific Ag Industries (Blueberry, Macadamia, GH veggie, cane, dairy);</li> <li>- 1.3.1 Oyster farmer survey about ORR;</li> </ul> <p>Targeted stakeholders general: Construction industry, recreational waterway users, commercial and recreational fishing users, horticulturalists, graziers, general community, downstream users (oyster farmers, fishers), coastal floodplain landholders.</p>	Number of participants in webinars or other relevant education events who report improved awareness of benefits of and threats to the marine estate	DPI-F (Initiative 1B lead – post event surveys), or nominated delegate(s)	<p>Post-event survey</p> <p>Program management (administrative) data.</p>	Documented opportunistically as events completed, collated annually	
Improved access to, use, coordination and efficiency of frameworks, policies and processes by responsible agencies for managing water quality and litter (1L)	LI 2: Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality		Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations	Initiative lead(s), in conjunction with Stakeholder Survey Coordinator	<p>Targeted stakeholder survey</p> <p>Responsible and related agency survey</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
			Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes	Initiative lead(s)	Post-training survey	Documented opportunistically as events/training completed, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		<p>Relevant frameworks, policies and processes include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul> <p>For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners</p> <p>For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WNSW, TfNSW, LLS</p> <p>NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures</p> <p>New/updated processes for works approvals to align with include:</p> <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> <p>(additional processes TBC with Initiative 2)</p>	<p>Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes</p>	<p>Initiative lead(s), in conjunction with Agency Staff Survey Coordinator</p>	<p>Agency staff survey</p>	<p>Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)</p>	
			<p>Number of times toolkit on Risk-based Framework is accessed</p>	<p>DPE-EHG (Initiative 1A lead)</p>	<p>Website analytics</p>	<p>Documented opportunistically, collated annually</p>	
			<p>Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information</p>	<p>DPI-F (Initiative 1B lead)</p>	<p>Targeted stakeholder survey</p> <p>Program management (administrative) data</p>	<p>Documented opportunistically as relevant documents completed/identified, collated annually</p>	
			<p>Future measure: number of views and downloads of Coastal Floodplain Study results</p>	<p>DPI-F (Initiative 1B lead)</p>	<p>SEED</p>	<p>Annually</p>	
			<p>Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)</p>	<p>DPI-F (Initiative 1B lead)</p>	<p>Program management (administrative) data.</p>	<p>Documented opportunistically as new sites confirmed, collated annually</p>	
			<p>Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)</p>	<p>DPI-F (Initiative 1B lead)</p>	<p>Program management (administrative) data.</p>	<p>Documented opportunistically as new sites confirmed, collated annually</p>	
			<p>Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)</p>	<p>DPI-F (Initiative 1B lead)</p>	<p>Program management (administrative) data.</p>	<p>Documented opportunistically as works applications approved, collated annually</p>	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved access to, use, coordination and efficiency of frameworks, policies and processes by responsible agencies for managing water quality and litter (1L)	LI 11: Responsible and related agencies report confidence to fulfil governance roles and responsibilities	<p>Activities include:</p> <ul style="list-style-type: none"> <li>- those relating to new approvals arrangements under 1.2, such as updated coastal floodplain drainage management or Coastal Floodplains Study information or Offsetting</li> <li>- Others TBC</li> </ul> <p>Responsible and related agencies include:</p> <ul style="list-style-type: none"> <li>- Local Councils</li> <li>- Others TBC</li> </ul> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents reporting confidence	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
Greater clarity of roles, responsibilities and accountabilities among all agencies responsible for water quality and litter management (1K)	LI 5: Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- general management of the marine estate;</li> <li>- water quality and litter management;</li> </ul> <p>For water quality, responsible and related agencies include: DPE-EHG, DPI, TfNSW, OLG, GSC, DPC, Sydney Water, LLS, DPE, LLS, WaterNSW, Local Councils.</p> <p>For litter: TBC</p> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents demonstrating clarity	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Table 12 Indicators and associated details for intermediate outcomes for Initiative 1

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)	LI 4: Aquatic and marine habitat connectivity	Types of habitats include all water dependent ecosystems in coastal catchment draining to marine estate, e.g.: - Riverine/aquatic habitat - Riparian vegetation - Ground water dependent ecosystems (surface and sub-surface) - Key Fish Habitat - Wetlands	Waterway length opened up for aquatic habitat connectivity (km)	DPI-F (Initiative 2 lead)	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
			Area of connected habitat (ha)	DPI-F (Initiative 1B lead) in conjunction with LLS delivery partner leads			
			Length of connected riparian habitat (km)	DPI-F (Initiative 1B lead) in conjunction with LLS delivery partner leads			
Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)	LI 28: Area of coastal landscape managed for habitat or to reduce diffuse source water pollution	The indicator measures the areas directly improved from MEMS on-ground actions only.  Types of habitats include all water dependent ecosystems in coastal catchments draining to marine estate, e.g., Riparian vegetation, ground water dependent ecosystems (surface and sub-surface), Key Fish Habitat, wetlands	Length of waterways managed for habitat or to reduce water pollution (km)	DPI (Initiative 1B lead) in conjunction with delivery partner leads	Program management (administrative) data.	Documented opportunistically as works completed, collated annually	
			Area managed for habitat or to reduce diffuse source water pollution (ha)	DPI (Initiative 1B lead) in conjunction with delivery partner leads	Program management (administrative) data.	Documented opportunistically as works completed, collated annually	
			Area of farmland under management practices to improve water quality outcomes (ha)	DPI (Initiative 1B lead) in conjunction with delivery partner leads (DPI Ag Research)	Program management (administrative) data.	Documented opportunistically as works completed, collated annually	
Reduction in input litter in target regions (1I)	KPI 2: Reduction in litter in the marine and estuarine environments in targeted regions.	National Litter Index (NLI) applies until end 2020. Key Litter Item Study (KLIS) applies from 2021 onwards.  Currently no target sites. The Marine Debris TARA guide selection of target site in future.	Litter items per 1000 square metres (NLI NSW)	DPE-EHG Initiative 1A lead sourced from NSW EPA	National Litter Index Keep Australia Beautiful (up to 2020)	Annual	
			Debris items per 1000 square metres (KLIS NSW) (urban estuarine environments)	DPE-EHG Initiative 1A lead sourced from NSW EPA	Key Litter Item Study (started 2017) - to measure marine litter	Annual	
Reduction in input pollutants to waterways at targeted sites within pilot areas (1H)	LI 1: Reduction in annual pollutant load estimates (modelled or measured), in pilot areas, comparing business as usual with new management actions	Targeted sites include those identified through the MEMS actions and projects.  Measures will only be applied where relevant to actions and projects.	Estimated reduction in annual total suspended solids (TSS) in target waterways	DPE-EHG Initiative 1A - relevant project leads	Program management (administrative) data.	Documented opportunistically as relevant projects or project milestones are completed, collated annually	
			Estimated reduction in annual total nitrogen (TN) in target waterways	DPE-EHG Initiative 1A lead (or specific action lead)	Program management (administrative) data.	Documented opportunistically as relevant projects or project milestones are completed, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
			Estimated reduction in annual total phosphorus (TP) in target waterways	DPE-EHG Initiative 1A lead (or specific action lead)	Program management (administrative) data.	Documented opportunistically as relevant projects or project milestones are completed, collated annually	
			Estimated tonnes of soil/sediment prevented from entering waterways (t)	DPI-F (Initiative 1B lead) in conjunction with LLS delivery partner leads	Program management (administrative) data.	Documented opportunistically as works completed, collated annually	
			Estimated reduction in annual runoff volume in target catchments.	DPE-EHG Initiative 1B lead, in conjunction with DPI Ag project leads	Program management (administrative) data.	Documented opportunistically as relevant projects or project milestones are completed, collated annually	
			Modelled or measured improvement or maintained levels of relevant stressors	DPE-EHG Initiative 1A lead (or specific action lead)	Program management (administrative) data.	Documented opportunistically as works completed, collated annually	
Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)	LI 2: Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality		Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations	Initiative lead(s), in conjunction with Stakeholder Survey Coordinator	Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
			Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes	Initiative lead(s)	Agency Staff survey	Documented opportunistically as events/training completed, collated annually	
			Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	Post-training survey	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
			Number of times toolkit on Risk-based Framework is accessed	DPE-EHG (Initiative 1A lead)	Agency staff survey	Documented opportunistically, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		<p>Relevant frameworks, policies and processes include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul> <p>For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners</p> <p>For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WNSW, TfNSW, LLS</p> <p>NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures</p> <p>New/updated processes for works approvals to align with include:</p> <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> <p>(additional processes TBC with Initiative 2)</p>	<p>Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information</p> <p>Future measure: number of views and downloads of Coastal Floodplain Study results</p> <p>Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)</p> <p>Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)</p> <p>Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)</p>	<p>DPI-F (Initiative 1B lead)</p>	<p>Website analytics Targeted stakeholder survey</p> <p>Program management (administrative) data SEED</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p>	<p>Documented opportunistically as relevant documents completed/identified, collated annually</p> <p>Annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as works applications approved, collated annually</p>	
		<p>Current identified knowledge gaps include:</p> <ul style="list-style-type: none"> <li>- Methods, effectiveness and benefits of investment for managing water quality and litter;</li> <li>- Research to support agriculture and horticulture industries to reduce nutrient run-off</li> <li>- Others identified in the TARA that relate to Initiative 1</li> </ul>	<p>Number of knowledge gaps filled, as identified through the TARA review</p>		<p>TARA review process</p> <p>Published papers and industry advisory material</p>	<p>Five-yearly, in association with the TARA review</p> <p>Annual reporting collation</p>	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)	LI 3: Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches		Number of threats and risks in the TARA where confidence in the assessment rating improves based on new knowledge generated through Initiative 1	Initiative leads with input from Environmental MIMP Technical Working Group (DPI-F Marine Ecosystems Research Leader / Senior Team Leader – Estuaries and Catchments Science (DPE-EHG)			
Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)	LI 11: Responsible and related agencies report confidence to fulfil governance roles and responsibilities	<p>Activities include:</p> <ul style="list-style-type: none"> <li>- Those relating to new approvals arrangements under 1.2, such as updated coastal floodplain drainage management or Coastal Floodplains Study information or Offsetting</li> <li>- Others TBC</li> </ul> <p>Responsible and related agencies include:</p> <ul style="list-style-type: none"> <li>- Local Councils</li> <li>- Others TBC</li> </ul> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents reporting confidence	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	Agency staff survey  Targeted stakeholder survey (to target councils)	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved consistency, coordination and integration among responsible agencies (1F)	KPI 12: Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate	<p>Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals within identified stakeholder categories. Unless otherwise specified, all categories will be surveyed. Stakeholder categories are:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities.</li> <li>- Targeted stakeholders and partners, including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.</li> <li>- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future</li> </ul>	Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance	Initiative leads, in conjunction with: <ul style="list-style-type: none"> <li>- DPI-F (Initiative 8 lead)</li> <li>- Agency Staff Survey Coordinator</li> <li>- Stakeholder survey coordinator</li> </ul>	<p>Coastal residents survey</p> <p>Agency staff survey</p> <p>Targeted stakeholder survey</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
Improved consistency, coordination and integration among responsible agencies (1F)	LI 2: Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality		Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations	Initiative lead(s), in conjunction with Stakeholder Survey Coordinator	Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
			Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes	Initiative lead(s)	Agency Staff survey	Documented opportunistically as events/training completed, collated annually	
			Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	Post-training survey	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		Relevant frameworks, policies and processes include those in relation to: <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul>	Number of times toolkit on Risk-based Framework is accessed	DPE-EHG (Initiative 1A lead)	Agency staff survey	Documented opportunistically, collated annually	
			Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information	DPI-F (Initiative 1B lead)	Website analytics Targeted stakeholder survey	Documented opportunistically as relevant documents completed/identified, collated annually	
		For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners	Future measure: number of views and downloads of Coastal Floodplain Study results	DPI-F (Initiative 1B lead)	Program management (administrative) data SEED	Annually	
		For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WNSW, TfNSW, LLS	Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)	DPI-F (Initiative 1B lead)	Program management (administrative) data.	Documented opportunistically as new sites confirmed, collated annually	
		NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures	Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)	DPI-F (Initiative 1B lead)	Program management (administrative) data.	Documented opportunistically as new sites confirmed, collated annually	
		New/updated processes for works approvals to align with include: <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> (additional processes TBC with Initiative 2)	Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)	DPI-F (Initiative 1B lead)	Program management (administrative) data.	Documented opportunistically as works applications approved, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved consistency, coordination and integration among responsible agencies (1F)	LI 5: Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- General management of the marine estate;</li> <li>- Water quality and litter management;</li> </ul> <p>For water quality, responsible and related agencies include: DPE-EHG, DPI, TfNSW, OLG, GSC, DPC, Sydney Water, LLS, DPE, LLS, WaterNSW, Local Councils.</p> <p>For litter: TBC</p> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents demonstrating clarity	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Table 13 Indicators and associated details for long-term outcomes for Initiative 1

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)	LI 2: Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality		Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations	Initiative lead(s), in conjunction with Stakeholder Survey Coordinator	Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
			Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes	Initiative lead(s)	Agency Staff survey	Documented opportunistically as events/training completed, collated annually	
			Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	Post-training survey	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
			Number of times toolkit on Risk-based Framework is accessed	DPE-EHG (Initiative 1A lead)	Agency staff survey	Documented opportunistically, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		Relevant frameworks, policies and processes include those in relation to: <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul>	Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information	DPI-F (Initiative 1B lead)	Website analytics Targeted stakeholder survey	Documented opportunistically as relevant documents completed/identified, collated annually	
		For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners	Future measure: number of views and downloads of Coastal Floodplain Study results	DPI-F (Initiative 1B lead)	Program management (administrative) data SEED	Annually	
		For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WNSW, TfNSW, LLS	Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)	DPI-F (Initiative 1B lead)	Program management (administrative) data.	Documented opportunistically as new sites confirmed, collated annually	
		NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures	Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)	DPI-F (Initiative 1B lead)	Program management (administrative) data.	Documented opportunistically as new sites confirmed, collated annually	
		New/updated processes for works approvals to align with include: <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> (additional processes TBC with Initiative 2)	Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)	DPI-F (Initiative 1B lead)	Program management (administrative) data.	Documented opportunistically as works applications approved, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)	LI 5: Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- general management of the marine estate;</li> <li>- water quality and litter management;</li> </ul> <p>For water quality, responsible and related agencies include: DPE-EHG, DPI, TfNSW, OLG, GSC, DPC, Sydney Water, LLS, DPE, LLS, WaterNSW, Local Councils.</p> <p>For litter: TBC</p> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents demonstrating clarity	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)	LI 11: Responsible and related agencies report confidence to fulfil governance roles and responsibilities	<p>Activities include:</p> <ul style="list-style-type: none"> <li>- those relating to new approvals arrangements under 1.2, such as updated coastal floodplain drainage management or Coastal Floodplains Study information or Offsetting</li> <li>- Others TBC</li> </ul> <p>Responsible and related agencies include:</p> <ul style="list-style-type: none"> <li>- Local Councils</li> <li>- Others TBC</li> </ul> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents reporting confidence	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
Improved adoption of best practice land management and compliance with rules and regulations for managing water pollution and litter (1D)	KPI 15: Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- land use and management;</li> <li>- water pollution and litter</li> </ul> <p>Best practice approaches and processes include:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Fertiliser management</li> <li>- Blueberry nutrition guidelines</li> <li>- Macadamia nut nutrient replacement</li> <li>- Farm water and nutrient management</li> <li>- Erosion mitigation practices</li> </ul>	Proportion of survey respondents self-reporting use of best practice approaches and processes, including the Risk-based Framework	<p>Initiative lead(s)</p> <p>Agency Staff Survey Coordinator</p> <p>Stakeholder Survey Coordinator</p>	<p>Agency staff survey</p> <p>Targeted stakeholder survey</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
			Number of planning instruments and land use plans that embed the Risk-based Framework	DPE-EHG (Initiative 1A lead)	<p>Program management (administrative) data</p> <p>Development Control Plans (online)</p>	Documented opportunistically as relevant projects are completed, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		<ul style="list-style-type: none"> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> </ul> Targeted stakeholders include: <ul style="list-style-type: none"> <li>- Ag industries</li> <li>- construction industry</li> <li>- landholders / participants in on-ground works;</li> <li>- Councils</li> </ul>	Number of works contracts and maintenance agreements that embed relevant best practice	Initiative lead(s), in conjunction with LLS and DPI Ag delivery partner leads	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
			Number of signed landholder agreements that embed relevant best practice	Initiative lead(s), in conjunction with LLS delivery partner leads	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
			Number of event participants (peak body members) reporting use of best practice approaches relevant to their industry	Initiative lead(s), or nominated delegate(s)	Post-event surveys, both immediately after and 12 months after.	Documented opportunistically as relevant projects are completed, collated annually	
Improved adoption of best practice land management and compliance with rules and regulations for managing water pollution and litter (1D)	LI 12: Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	Activities include those relating to: <ul style="list-style-type: none"> <li>- land use and management;</li> <li>- water pollution and litter</li> </ul> Specific rules, regulations and guidelines include: <ul style="list-style-type: none"> <li>- For water quality - Conditions of development consent;</li> <li>- Poor work practices that may affect WQ – from 1.2.13 and Ag Programs;</li> <li>- Fisheries permit conditions</li> <li>- Best practice approaches for diffuse source water pollution to be developed through MEMS</li> </ul> Targeted stakeholders include: <ul style="list-style-type: none"> <li>- Ag industries</li> <li>- Construction industry</li> <li>- Landholders / participants in on-ground works;</li> <li>- Councils</li> </ul>	Total litter fines issued in NSW	DPE-EHG (Initiative 1A lead and EPA (litter))	Litter fine data – EPA	Annual	
			Proportion of noncompliant stakeholders audited through the Fish Friendly Local Council Program	DPI-F Initiative 1B lead	Fish Friendly Local Council Program audit records	Documented opportunistically as audits are completed, collated annually	
			Proportion of building sites identified as noncompliant with runoff regulations	DPE-EHG (Initiative 1A lead)	TBC	Documented opportunistically as audits are completed, collated annually	
			Proportion of permit breaches by councils or developers for sediment, fish passage or harm marine vegetation permits	DPI-F Initiative 1B lead	Compliance records of infringements	Documented opportunistically as audits are completed, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
(2B) Maintained or improved biodiversity and marine habitats (1C)	KPI 4: Biodiversity and habitat indicator	Includes measures of: - Estuarine macrophyte extent, fragmentation - Coastal algal abundance and condition - Coastal invertebrate abundance and size - Coastal fish diversity, abundance, and size - Estuarine fish diversity, abundance, and size	Changes in areal extent of macrophytes, species composition, degree of fragmentation, remote sensing of mangrove canopy condition (local scale)  Percent cover of kelp, foliose algae, benthic invertebrates. Relative urchin abundance. Condition, biomass and recruitment of kelp  Fish size, abundance & diversity  Fish, invertebrates and macroalgal diversity, abundance, size and covers  Fish assemblages	Environmental MIMP Technical Working Group	Various – monitoring by DPE and DPI. Documented in the Environmental Condition Framework	Measure-specific collection frequencies. Document in the Environmental Condition Framework	Monitoring is statewide
Reduction in input litter to the marine estate in alignment with community values (1B)	KPI 2: Reduction in litter in the marine and estuarine environments in targeted regions.	National Litter Index (NLI) applies until end 2020. Key Litter Item Study (KLIS) applies from 2021 onwards.  Currently no target sites. The Marine Debris TARA guide selection of target site in future.	Litter items per 1000 square metres (NLI NSW)	DPE-EHG Initiative 1A lead sourced from NSW EPA	National Litter Index Keep Australia Beautiful (up to 2020)	Annual	
			Debris items per 1000 square metres (KLIS NSW) (urban estuarine environments)	DPE-EHG Initiative 1A lead sourced from NSW EPA	Key Litter Item Study (started 2017) - to measure marine litter	Annual	
Waterway health in the marine estate aligns with community values (1A)	KPI 1: Waterway health supports community values and uses	To be assessed through: Protection of Aquatic Ecosystems (PAE), Primary Contact Recreation (swimming, PCR) Edible Seafood (ES). Ecological health grade (to be developed)  PAE: will use the current estuary health grade scores ( <a href="https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm">https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm</a> )	PAE: Estuary Health Grade (A, B, C, D, E)	DPE-EHG	Current estuary health grade scores ( <a href="https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm">https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm</a> )	Annual (only where available, noting that individual sites are assessed on three-year cycles, therefore regional results reflect only those sites assessed in the previous 12 months)	
			PCR: Beachwatch Grades (A, B, C, D, E)	DPE-EHG	Existing Beachwatch program (where available)	Annual (only where available)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		160250.htm) and will work on development of additional measures for pH impact to integrate into the same calculation framework. Data collection will focus on the existing Statewide MEMA Cumulative Impact Monitoring being done by DPE-EHG, with additional sites included as necessary. PCR: will use Beachwatch Grades from existing Beachwatch program. ES: will use Safe Foods Australia grades for oyster producing estuaries plus results from National Food Standards seafood surveys and any other surveys (pipis, other contaminants) that are done in the time period. Supplemented by some additional monitoring as part of Management Action 1.5.	Edible Seafood grades (placeholder - grade approach to be developed)	DPI, FoodSafe NSW	TBC	TBC	
			Ecological health grades (placeholder - TBD)	DPE-EHG	TBC	TBC	
Waterway health in the marine estate aligns with community values (1A)	KPI 18: Community reports satisfaction with the health of their local waterways	Relates to Question 1 in the draft NSW Water Quality Objectives Survey	Proportion of survey respondents reporting satisfaction with the health of waterway(s) in their local area (% reporting "satisfied" or "highly satisfied")	DPE-EHG (Initiative 1A lead) Specific action lead(s)	NSW Water Quality Objectives Survey (Question 1 in draft survey)	Water Quality Objectives Survey: 2021 with potential for repeated surveys or survey questions.	Future data collection is funding dependent

## Initiative 2 - Delivering healthy coastal habitats with sustainable use and development

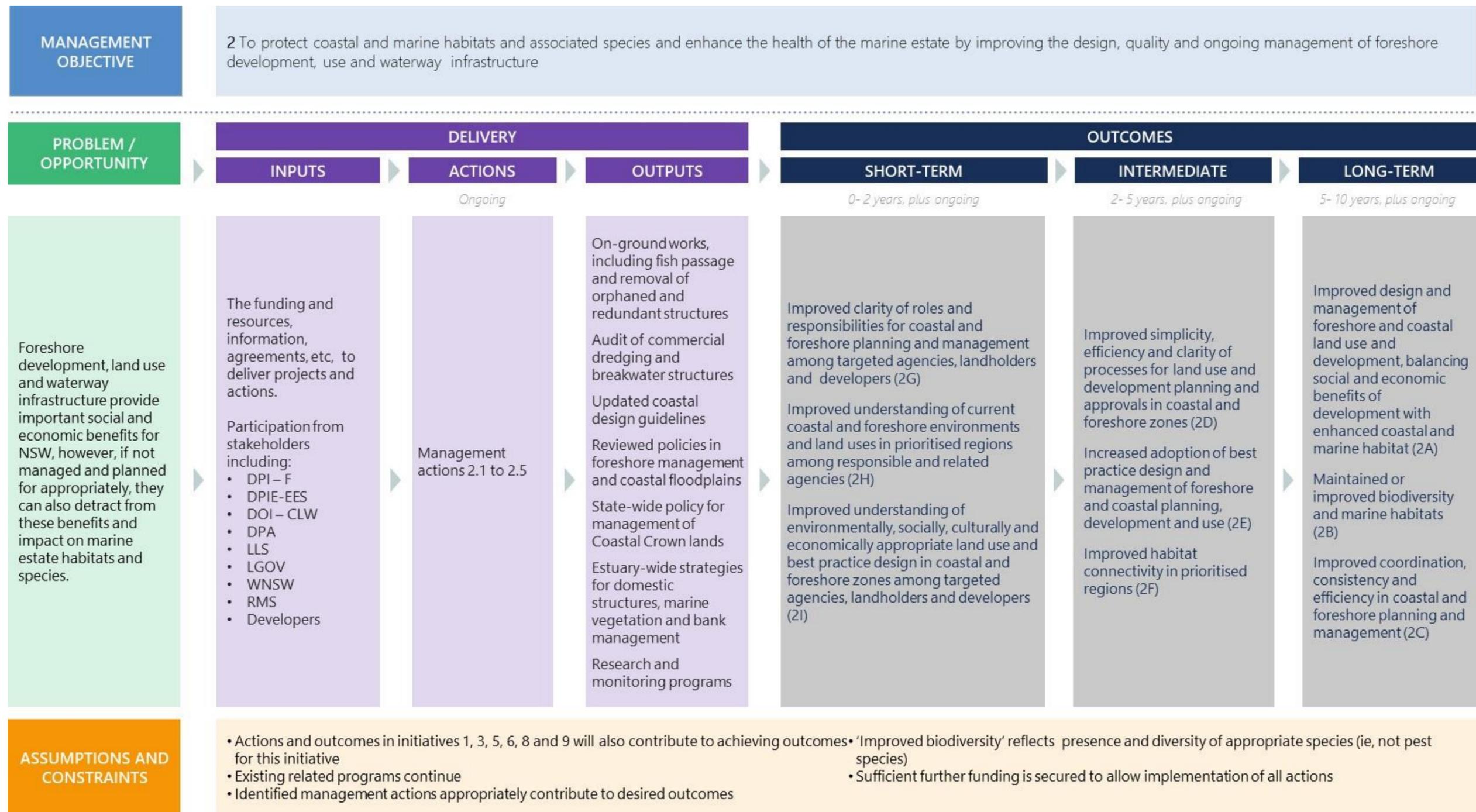


Figure 12 Program logic for Initiative 2

OUTCOME CODE	2I	2H	2G	2F	2E	2D	2C	2B	2A
<b>OUTCOME</b>	Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among agencies, landholders, developers and the community	Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible agencies	Improved clarity of roles and responsibilities for coastal and foreshore planning and management among agencies, landholders, developers and the community	Improved habitat connectivity in prioritised regions	Increased adoption of best practice design and management of foreshore and coastal planning, development and use	Improved simplicity, efficiency and clarity of processes for land use and development planning and approvals in coastal and foreshore zones	Improved coordination, consistency and efficiency in coastal and foreshore planning and management	Maintained or improved biodiversity and marine habitats	Improved design and management of foreshore and coastal land use and development, balancing social and economic benefits of development with enhanced coastal and marine habitat
<b>OUTCOME TIMEFRAME</b>	<i>Short-term</i>	<i>Short-term</i>	<i>Short-term</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Long-term</i>	<i>Long-term</i>
<b>OUTCOME INDICATORS</b>	LI 3, LI 21	LI 3, LI 9	LI 5	LI 4	KPI 15	LI 6	KPI 12, KPI 16	KPI 4	KPI 14
<b>MANAGEMENT ACTIONS</b>									
2.1								KPI 4	KPI 14
2.1 (a)					KPI 15			KPI 4	KPI 14
2.1 (b)					KPI 15			KPI 4	KPI 14
2.1 (c)		LI 3, LI 9			KPI 15			KPI 4	KPI 14
2.2								KPI 4	KPI 14
2.2 (a)	LI 3, LI 21	LI 3, LI 9			KPI 15		KPI 12, KPI 16	KPI 4	KPI 14
2.2 (b)	LI 3, LI 21				KPI 15			KPI 4	KPI 14
2.3								KPI 4	KPI 14
2.3 (a)	LI 3, LI 21		LI 5		KPI 15	LI 6	KPI 12, KPI 16	KPI 4	KPI 14
2.3 (b)		LI 3, LI 9	LI 5			LI 6	KPI 12, KPI 16	KPI 4	KPI 14
2.3 (c)	LI 3, LI 21		LI 5		KPI 15	LI 6		KPI 4	KPI 14
2.3 (d)						LI 6	KPI 12, KPI 16	KPI 4	KPI 14
2.3 (e)					KPI 15		KPI 12, KPI 16	KPI 4	KPI 14
2.4								KPI 4	KPI 14
2.4 (a)	LI 3, LI 21	LI 3, LI 9	LI 5		KPI 15	LI 6	KPI 12, KPI 16	KPI 4	KPI 14
2.4 (b)				LI 4				KPI 4	KPI 14
2.5	LI 3, LI 21	LI 3, LI 9						KPI 4	KPI 14

Figure 13 Action – outcome mapping for Initiative 2

Table 14 Indicators and associated details for short-term outcomes for Initiative 2

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (21)	LI 3: Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	<p>Current identified knowledge gaps are consistent with the TARA and include:</p> <ul style="list-style-type: none"> <li>- Current and future appropriate land uses for coastal and foreshore environments to address loss of public access availability (in particular limited or lack of access infrastructure to the marine estate, loss of public access) and foreshore works, and to address climate change stressors for both 20 and 50 year projections;</li> <li>- Assessment/policy outcomes for foreshore works (i.e. domestic waterfront structures, riverbank management, marine vegetation strategy work, breakwater structures);</li> <li>- Fish barriers and fish passage (appropriate fishway design and fish barriers);</li> <li>- Floodplain management options;</li> </ul> <p>Type of knowledge gaps include:</p> <ul style="list-style-type: none"> <li>- need to develop and publish assessment tools, and methods for applying such tools</li> <li>-identifying planning opportunities and constraints, and develop methods to integrate planning and land use management.</li> </ul>	Number of knowledge gaps filled, as identified through the TARA review	DPI-F (Initiative 2 lead)	TARA review process	Five-yearly, in association with the TARA review	
			Number of knowledge gaps filled through assessments undertaken using new methods and tools developed through Initiative 2 actions (such as the development of new tools to identify and quantify the spatial extent (km) of coastal land including floodplains and foreshores that are threatened, and that could be prioritised under new management approaches)	DPI-F (Initiative 2 lead)	Program management (administrative) data and outputs.  MIMP Environmental MIMP Technical Working Group documentation.	Documented opportunistically as gaps are filled (i.e., outputs are completed), and collated annually	
Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (21)	LI 21: Targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- land use and management</li> </ul> <p>Specific rules, regulations, guidelines and best practice approaches include:</p> <ul style="list-style-type: none"> <li>- Floodplain drainage works approvals</li> <li>- Foreshore development approvals</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Foreshore landowners</li> <li>- Cane Industry</li> <li>- Coastal Councils</li> <li>- Drainage Unions</li> </ul>	Proportion of survey respondents reporting awareness and clarity	DPI-F (Initiative 2 lead)  Stakeholder Survey Coordinator	<p>Post-training survey or other follow-up discussions (formal or informal).</p> <p>Targeted stakeholder survey.</p>	<p>Irregularly and opportunistically (post-event), collated annually.</p> <p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p>	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		- Other floodplain landholders and industries	Number of stakeholders with access to new tools such as online mapping and comprehensive summaries of approval pathways that streamline approval responsibilities	DPI-F (Initiative 2 lead)	Post-training survey or other follow-up discussions (formal or informal).  Program management (administrative) data  Application of mapping and documented tools when undertaking assessments and approvals	Documented opportunistically as instances of adoption are identified, collated annually	
Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible and related agencies (2H)	LI 3: Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Current identified knowledge gaps are consistent with the TARA and include: - Current land uses in coastal and foreshore environments to address loss of public access availability (in particular limited or lack of access infrastructure to the marine estate, loss of public access) and foreshore works, and to address climate change stressors for both 20 and 50 year projections; - Fish barriers and fish passage (appropriate fishway design and fish barriers);  Type of knowledge gaps include: - need to develop and publish assessment tools, and methods for applying such tools	Number of knowledge gaps filled, as identified through the TARA review	DPI-F (Initiative 2 lead)	TARA review process	Five-yearly, in association with the TARA review	
			Development of new tools to identify and quantify the spatial extent (km) of coastal land including floodplains and foreshores that are threatened, and that could be prioritised under new management approaches	DPI-F (Initiative 2 lead)	Program management (administrative) data.  MIMP Environmental MIMP Technical Working Group documentation.	Documented opportunistically as gaps are filled, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible and related agencies (2H)	LI 9: Related agencies report improved understanding of current coastal and foreshore land uses in prioritised regions	Includes testing awareness and use of methods, maps and other tools for identifying coastal and foreshore land uses.  Prioritised regions include: - Clarence to Tweed - Bulli to Batemans  Targeted related agencies include: - DPE-P - NRAR - Crown Lands - DPE-EHG	Proportion of relevant agency staff reporting improved understanding of current coastal and foreshore land uses (%)	Agency Staff Survey coordinator	Agency Staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	
Improved clarity of roles and responsibilities for coastal and foreshore planning and management among targeted agencies, landholders and developers (2G)	LI 5: Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	Activities include those relating to: - foreshore development and use - coastal floodplain and infrastructure management  Relevant agency staff include DPE-P, NRAR, Crown Lands, Local governments and others with their roles and responsibilities as outlined in the domestic waterfront structures strategy, marine vegetation strategies, coastal floodplain assessments and drainage management plans.	Proportion of survey respondents demonstrating clarity and reporting application of new tools in routine planning responsibilities among targeted agencies	DPI-F (Initiative 2 lead);  Agency Staff Survey Coordinator	Agency staff survey  Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	

Table 15 Indicators and associated details for intermediate outcomes for Initiative 2

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved habitat connectivity in prioritised regions (2F)	LI 4: Aquatic and marine habitat connectivity	Types of habitats include all water dependent ecosystems in coastal catchment draining to marine estate, e.g.: - Riparian vegetation - Ground water dependent ecosystems (surface and sub-surface) - Key Fish Habitat - Wetlands	Waterway length opened up (km) Area of connected habitat (ha)	DPI-F (Initiative 2 lead)	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Increased adoption of best practice design and management of foreshore and coastal planning, development and use (2E)	KPI 15: Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders	Activities include those relating to: - Land use and management - Water pollution	Proportion of survey respondents self-reporting use of best practice approaches and processes (%)	DPI-F (Initiative 2 lead);  Agency Staff Survey Coordinator  Stakeholder Survey Coordinator	Agency staff survey  Targeted stakeholder survey.	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
		Use of best practice approaches and processes include: - Specific documented approaches and processes - Adoption into council/related stakeholder processes i.e. references in plans, adoption of those areas as coastal wetland areas. - Risk-based Framework - Estuary specific strategies	Length of foreshore where a foreshore structure strategy applies (km)	DPI-F (Initiative 2 lead);	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
		Targeted stakeholders include: - Responsible and related agencies	Areal extent of estuary foreshore and coastal floodplain managed by strategy for improved social, cultural, economic and environmental values (km <sup>2</sup> )	DPI-F (Initiative 2 lead);	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
		Use/adoption of processes, agreements, contracts that incorporate best practice could include: - Number of planning instruments and land use plans providing direction to use the Risk-based Framework - Number of works contracts and maintenance agreements	Number of estuary specific strategies and other tools	DPI-F (Initiative 2 lead), DPE-EHG (Initiative 1a lead)	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
		- Number of landholder agreements signed - Tracking adoption / penetration of Strategies into planning documents, e.g. CMPs, LEPs and SEPPs	Number of signed landholder agreements that embed relevant best practice	DPI-F (Initiative 2 lead)	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
			Number of works contracts and maintenance agreements that embed relevant best practice	DPI-F (Initiative 2 lead)	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
Improved simplicity, efficiency and clarity of processes for land use and development planning and approvals in coastal	LI 6: Responsible agencies report improved simplicity, clarity and efficiency for regulatory processes and approvals	Regulatory processes and approvals such as: - Land use and development planning and approvals in coastal and foreshore zones - Crown land consent for work on crown land  Responsible agencies include: - Councils	Proportion of responsible agency staff who report experiencing improved simplicity, clarity and efficiency to manage regulatory processes and approvals	DPI-F (Initiative 2 lead)  Agency Staff Survey Coordinator	Agency Staff survey  Program management (administrative) data.	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
and foreshore zones (2D)		- All MEMA agencies and Departments within their cluster	Reduction in the number of regulatory assessments or approvals concerning lineal length of estuary or areal extent of intertidal coastal wetlands where referrals may be generated for assessment by agency staff	DPI-F (Initiative 2 lead)	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	

Table 16 Indicators and associated details for long-term outcomes for Initiative 2

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)	KPI 12: Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate	Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.	Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance	DPI-F (Initiative 2 lead) Agency Staff Survey Coordinator Stakeholder Survey Coordinator	Agency staff survey Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	
		Data collection will be undertaken through a survey of individuals who have used the tools, including online interaction and feedback within the following stakeholder groups: - Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities with roles and responsibilities as outlined in the domestic waterfront structures strategy, marine vegetation strategies, coastal floodplain assessments and drainage management plans. - Targeted stakeholders and partners, including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.	Number of downloads/demonstrations of use of best practice tools	DPI-F (Initiative 2 lead)	Administrative data	Documented opportunistically as relevant projects are completed, collated annually	
Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)	KPI 16: Responsible and related agencies report satisfaction with efficiency and effectiveness governance of the marine estate	Stakeholder satisfaction will be assessed through the following measures (assessed separately for consistency within own organisation and across responsible agencies): - Allocation of resources, including staff and funding, across management of the marine estate is clearly directed towards identified outcomes - Systems, processes, skills, knowledge and	Average satisfaction rating based on Likert scale for each measure	DPI-F (Initiative 2 lead). Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		<p>governance and administrative arrangements allow organisations and individuals to efficiently and effectively deliver their responsibilities, with minimal duplication, unreasonable delays or unnecessary activities</p> <ul style="list-style-type: none"> <li>- Responsible agencies are achieving, or on track to achieve, identified outcomes within budget</li> </ul> <p>Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities; local government; and, researchers.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals from responsible and related agencies, including marine estate managers from relevant government departments, agencies, statutory authorities and local government</p>					
Maintained or improved biodiversity and marine habitats (2B)	KPI 4: Biodiversity and habitat indicator	<p>Includes measures of:</p> <ul style="list-style-type: none"> <li>- Estuarine macrophyte extent, fragmentation</li> <li>- Coastal algal abundance and condition</li> <li>- Coastal invertebrate abundance and size</li> <li>- Coastal fish diversity, abundance, and size</li> <li>- Estuarine fish diversity, abundance, and size.</li> </ul>	<p>Changes in areal extent of macrophytes, species composition, degree of fragmentation, remote sensing of mangrove canopy condition (local scale)</p> <p>Percent cover of kelp, foliose algae, benthic invertebrates. Relative urchin abundance. Condition, biomass and recruitment of kelp</p> <p>Fish size, abundance &amp; diversity</p> <p>Fish, invertebrates and macroalgal diversity, abundance, size and covers</p> <p>Fish assemblages</p>	Environmental MIMP Technical Working Group	Various – monitoring by DPE and DPI. Documented in the Environmental Condition Framework	Measure-specific collection frequencies. Document in the Environmental Condition Framework	Monitoring is statewide

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved design and management of foreshore and coastal land use and development, balancing social and economic benefits of development with enhanced coastal and marine habitat (2A)	KPI 14: Agency staff report using decision-making and approvals processes for foreshore and coastal land use management, design and development that balances social and economic benefits with enhancing coastal and marine habitats	<p>Specific decision-making and approvals processes include those relating to:</p> <ul style="list-style-type: none"> <li>- Foreshore development and use</li> <li>- Coastal floodplain and infrastructure management</li> <li>- Other relevant coastal systems</li> </ul> <p>Relevant agency staff include DPE-P, NRAR, Crown Lands and others with their roles and responsibilities as outlined in the domestic waterfront structures strategy, marine vegetation strategies, coastal floodplain assessments and drainage management plans.</p>	Proportion of survey respondents reporting use of identified processes	DPI-F (Initiative 2 lead).  Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	The survey will be designed to support accurate self-reporting, and that use of these processes is effective and appropriate.

### Initiative 3 – Planning for climate change

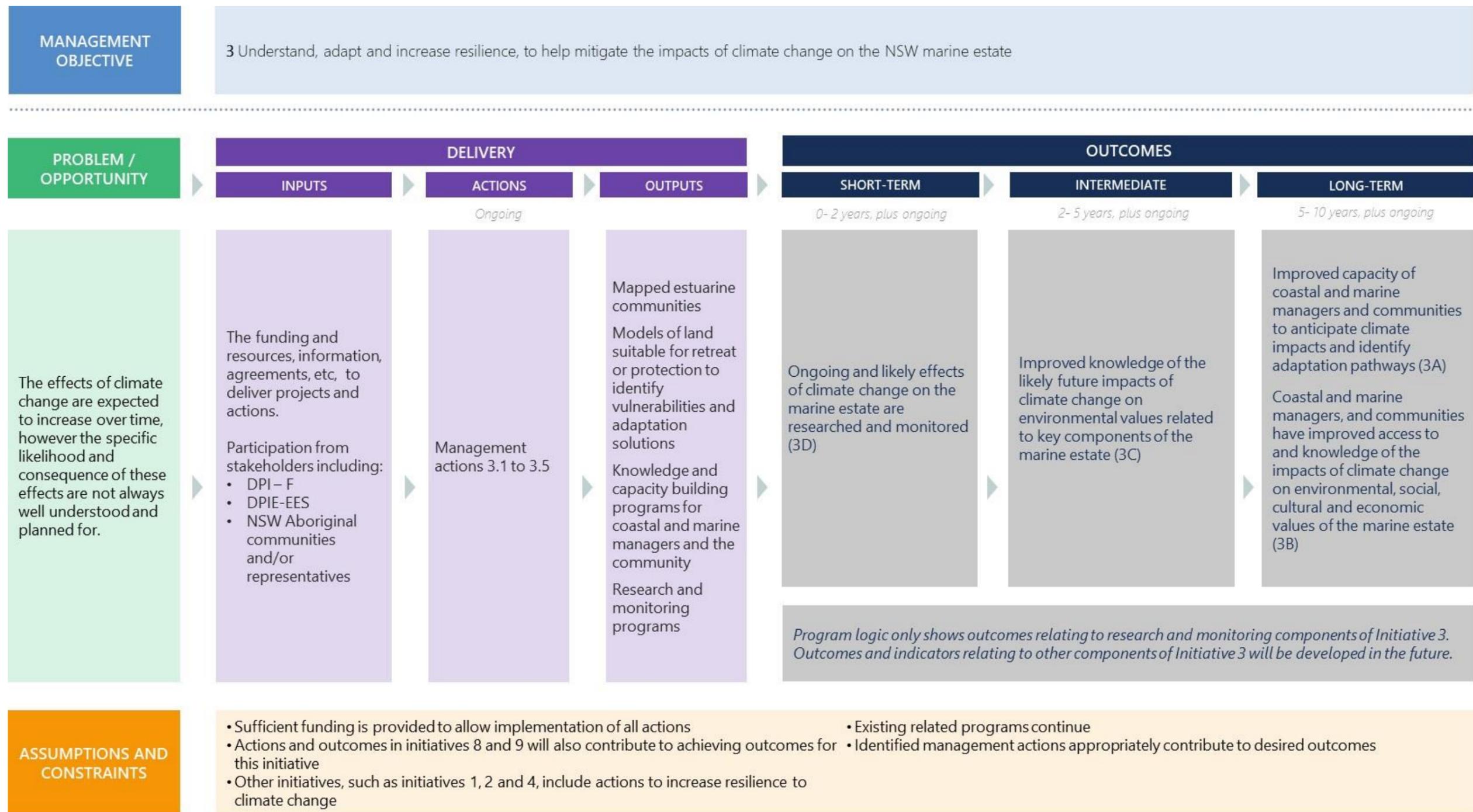


Figure 14 Program logic for Initiative 3

Table 17 Indicators and associated details for short-term outcomes relating to research and monitoring components of Initiative 3

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Ongoing and likely effects of climate change on the marine estate are researched and monitored (3D)	LI 3: Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Current identified knowledge gaps include: - likely future impacts of climate change - others identified in the TARA	Number of knowledge gaps filled, as identified through the TARA review	DPI-F / DPE-EHG	TARA review process	Five-yearly, in association with the TARA review.	
			Number of assets systematically monitored		Program management (administrative) data.  MIMP Environmental MIMP Technical Working Group documentation.	Documented opportunistically as gaps are filled, collated annually.	

Table 18 Indicators and associated details for intermediate outcomes relating to research and monitoring components of Initiative 3

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved knowledge of the likely future impacts of climate change on environmental values related to key components of the marine estate (3C)	LI 3: Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Current identified knowledge gaps include: - likely future impacts of climate change - others identified in the TARA	Number of knowledge gaps filled, as identified through the TARA review	DPI-F / DPE-EHG	TARA review process	Five-yearly, in association with the TARA review.	
			Number of assets systematically monitored		Program management (administrative) data.  MIMP Environmental MIMP Technical Working Group documentation.	Documented opportunistically as gaps are filled, collated annually.	

Table 19 Indicators and associated details for long-term outcomes relating to research and monitoring components of Initiative 3

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on	LI 3: Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and	Current identified knowledge gaps include: - likely future impacts of climate change - others identified in the TARA	Number of knowledge gaps filled, as identified through the TARA review	DPI-F / DPE-EHG	TARA review process	Five-yearly, in association with the TARA review.	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
environmental, social, cultural and economic values of the marine estate (3B)	management approaches		Number of assets systematically monitored		Program management (administrative) data.  MIMP Environmental MIMP Technical Working Group documentation.	Documented opportunistically as gaps are filled, collated annually.	
Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)	LI 10: Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	Includes: - threats identified in the TARA relating to impacts of climate change on the marine estate - benefits of adapting to climate change impacts - willingness to adapt to climate change impacts  Targeted stakeholders include: - NSW Government agencies, local government - industries of the marine estate - community - Aboriginal community - Coastal councils - Transport agencies	Proportion of survey respondents demonstrating awareness of benefits and threats	DPE research – coordinator stakeholder surveys (Agency Staff Survey Coordinator).	Targeted stakeholder surveys.	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Improved capacity of coastal and marine managers and communities to anticipate climate impacts and identify adaptation pathways (3A)	KPI 10: Community and targeted stakeholders demonstrate improved capacity to anticipate and adapt to climate change impacts	Baseline of capacity and increasing number measures to be determined through the climate change engagement actions and sub actions (3.3) on climate engagement.  Post event/engagement survey to be developed as one standardised approach with stakeholders. (TBC, in collaboration with Agency Staff Survey Coordinator)  Targeted stakeholders include: - NSW Government agencies, local government - industries of the marine estate - community - Aboriginal community - Coastal councils - Transport agencies	Number of community members and targeted stakeholders demonstrating improved capacity from engagement activities	DPE-EHG (Senior Team Leader, Cultural and Ecosystem-based Adaptation (DPE-EHG)) and DPI-F (Initiative 3 lead), in collaboration with Agency Staff Survey Coordinator	Post event/engagement participant feedback survey.  Targeted stakeholder survey.  Responsible and related agency survey.	Opportunistically following conclusion of specific events, activities or programs. Collated annually.  Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	Targeted engagement activities are funded.

## Initiative 4 – Protecting the Aboriginal cultural values of the marine estate

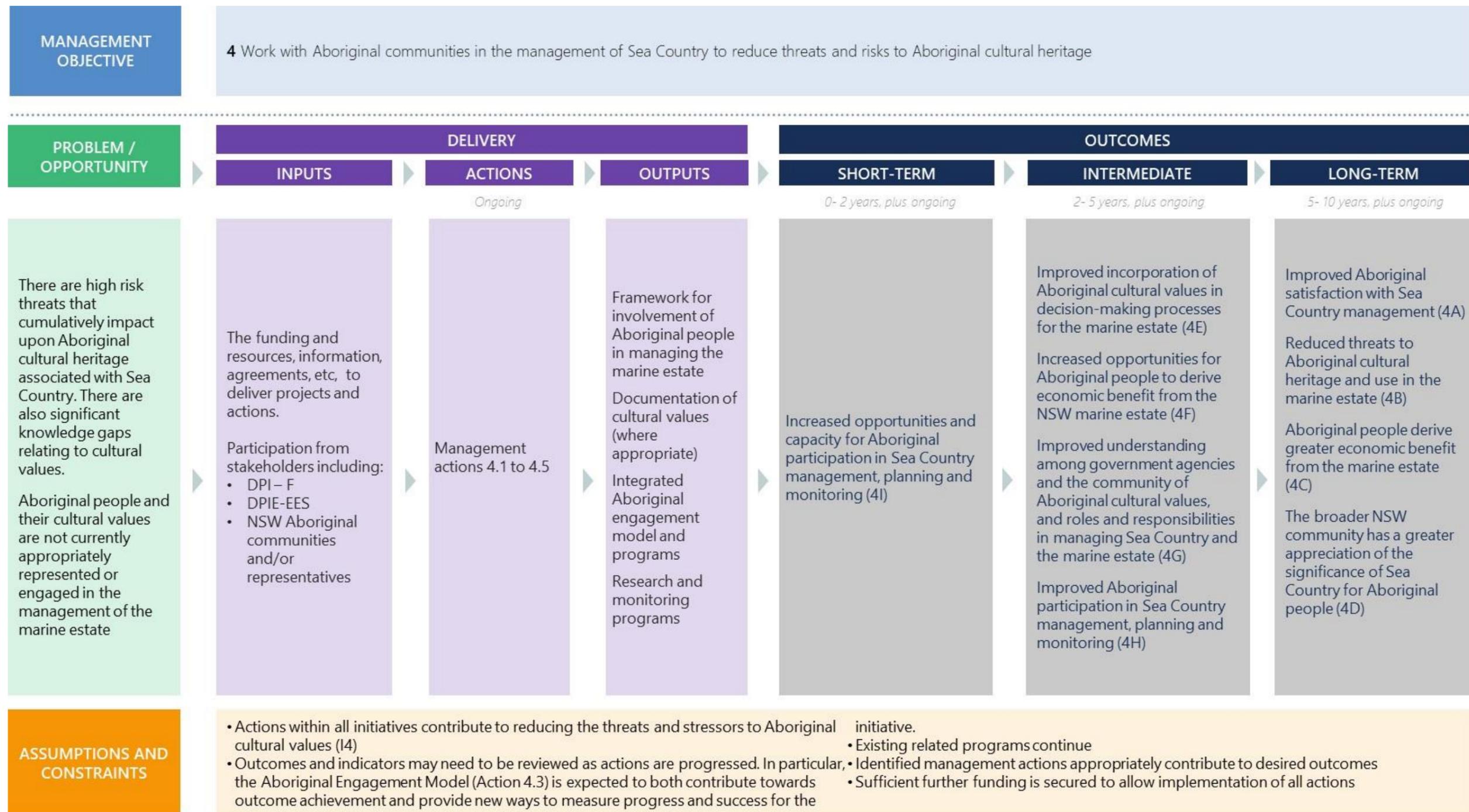


Figure 15 Program logic for Initiative 4

OUTCOME CODE	4I	4H	4G	4F	4E	4D	4C	4B	4A
OUTCOME	Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring	Improved Aboriginal participation in Sea Country management, planning and monitoring	Improved understanding of Aboriginal cultural values of Sea Country and the marine estate among government agencies and the community	Increased opportunities for Aboriginal people to derive economic benefit from the NSW marine estate	Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate	The broader NSW community has a greater appreciation of the significance of Sea Country for Aboriginal people	Aboriginal people derive greater economic benefit from the marine estate	Reduced threats to Aboriginal cultural heritage and use in the marine estate	Improved Aboriginal satisfaction with Sea Country management
OUTCOME TIMEFRAME	Short-term	Intermediate	Intermediate	Intermediate	Intermediate	Long-term	Long-term	Long-term	Long-term
OUTCOME INDICATORS	LI 14, LI 16, LI 30	LI 13, LI 14, LI 15, LI 16, KPI 7	KPI 13, LI 17	KPI 7	LI 13, LI 31, LI 14	KPI 13	KPI 7	KPI 19	KPI 6

MANAGEMENT ACTIONS									
4.1	LI 14, LI 16, LI 30	LI 13, LI 14, LI 15, LI 16, KPI 7		KPI 7		KPI 13	KPI 7	KPI 19	KPI 6
4.2			KPI 13, LI 17		LI 13, LI 31, LI 14	KPI 13	KPI 7	KPI 19	KPI 6
4.3	LI 14, LI 16, LI 30	LI 13, LI 14, LI 15, LI 16, KPI 7				KPI 13	KPI 7	KPI 19	KPI 6
4.4				KPI 7	LI 13, LI 31, LI 14	KPI 13	KPI 7	KPI 19	KPI 6
4.5			KPI 13, LI 17		LI 13, LI 31, LI 14	KPI 13	KPI 7	KPI 19	KPI 6

Figure 16 Action – outcome mapping for Initiative 4

Table 20 Indicators and associated details for short-term outcomes for Initiative 4

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)	LI 14: Number of Sea Country areas under management agreements	Agreements include: - Memorandums of Understanding (MOUs) - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans (LMPs)	Number of land/water areas covered by management agreements	DPI-F (Initiative 4 lead)	Administrative data	Annual	
Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)	LI 16: Number of programs or agreements initiated by Aboriginal groups or individuals for managing Sea Country	Programs, projects or agreements include: - Memorandums of Understanding (MOUs) - Sea Country ranger programs - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans	Number of programs or agreements initiated	DPI-F (Initiative 4 lead)	Administrative data	Annual	
Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)	LI 30: Improved capacity for Aboriginal people to participate in Sea Country Management	Capacity may be fostered through programs and training relating to: - General boating licenses - Weed and marine debris management - Elders mentoring programs - Deckhand and Coxswain courses - Education programs - Tourism Course - any others applicable	Number of capacity building courses and training opportunities offered for Aboriginal people  Number of Aboriginal people completing relevant training and certifications  Newly trained/certified Aboriginal people report that the course or training has helped them feel better equipped to participate in relevant Sea Country management activities	DPI-F (Initiative 4 lead)	Administrative data  Post event/action surveys, testimonials, post training survey, post participation survey.	Annual  Surveys post event/activity – Irregularly and opportunistically, collated annually	

Table 21 Indicators and associated details for intermediate outcomes for Initiative 4

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	LI 13: Aboriginal group or individual participation in Sea Country management,	Includes participation in relation to: - representation on marine estate advisory committees - direct employment with responsible and related agencies in roles relating to the marine estate - Sea Country ranger programs	Number of Aboriginal representatives on marine estate advisory committees  Number of Aboriginal Advisory Groups related to the marine estate  Number of Aboriginal participants in events, activities or programs involving Initiative 4	DPI-F (Initiative 4 lead)	Administrative data	Annual	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
	planning and monitoring	<ul style="list-style-type: none"> <li>- Aboriginal Advisory Groups related to the marine estate</li> <li>- MOUs in relation to the marine estate</li> <li>- events, activities or programs run by Initiative 4 including elders Olympics, knockout.</li> </ul>	Number of marine fauna responses that include Aboriginal representatives	Initiative 5 lead, in conjunction with Initiative 4 lead			Requires coordination with Initiative 5 to engage Aboriginal representatives in marine fauna responses
Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	LI 14: Number of Sea Country areas under management agreements	Agreements include: <ul style="list-style-type: none"> <li>- Memorandums of Understanding (MOUs)</li> <li>- Land and Sea Country Plans</li> <li>- Service Level Agreements</li> <li>- CRUA (Cultural Resource Use Agreements)</li> <li>- Local Management Plans (LMPs)</li> </ul>	Number of land/water areas covered by management agreements	DPI-F (Initiative 4 lead)	Administrative data	Annual	
Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	LI 15: Aboriginal participants satisfaction with events, activities or programs for involvement in Sea Country management, planning and monitoring	Measurement of this indicator will focus on those involved in programs or activities directly arising from the initiative.	Average satisfaction rating based on Likert scale	DPI-F (Initiative 4 lead)	Post event/activity participant feedback survey	Irregularly and opportunistically (post-event), collated annually	
Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	LI 16: Number of programs or agreements initiated by Aboriginal groups or individuals for managing Sea Country	Programs, projects or agreements include: <ul style="list-style-type: none"> <li>- Memorandums of Understanding (MOUs)</li> <li>- Sea Country ranger programs</li> <li>- Land and Sea Country Plans</li> <li>- Service Level Agreements</li> <li>- CRUA (Cultural Resource Use Agreements)</li> <li>- Local Management Plans</li> <li>- Funded project briefs</li> </ul>	Number of programs or agreements initiated	DPI-F (Initiative 4 lead)	Administrative data	Annual	
Improved Aboriginal participation in Sea Country management,	KPI 7: Aboriginal employment and opportunities in	Responsible agencies: the four MEMA agencies Related agencies include other delivery partners, such as LLS, DPE	Number and total value of contracts awarded to Aboriginal-owned entities by responsible and related agencies for services in relation to marine estate management	DPI-F (Initiative 4 lead)	NSW public service procurement data	Annual	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
planning and monitoring (4H)	relation to the marine estate	<p>Water, Crown Lands, EPA, NRAR, Heritage NSW, LGAs (do employ and award contracts to aboriginal organisations).</p> <p>Employment opportunities include:</p> <ul style="list-style-type: none"> <li>- Fox Control Program</li> <li>- Bush regeneration works</li> <li>- Pest and weed works</li> <li>- Other on-ground activities</li> <li>- Professional services</li> </ul> <p>Capacity building courses and training opportunities include:</p> <ul style="list-style-type: none"> <li>- Deckhand and Coxswain courses</li> <li>- Education programs</li> </ul>	Number of Aboriginal-owned entities that are registered suppliers with responsible and related agencies for provision of services in relation to marine estate management		NSW public service procurement data	Annual	
			Number of Aboriginal-owned entities that have been contracted by responsible and related agencies to provide services in relation to marine estate management		NSW public service procurement data	Annual	
			Proportion of addressable spend to Aboriginal businesses (target: > 1 %) in relation to marine estate management		NSW public service procurement data	Annual	
			Proportion of goods and services contracts to Aboriginal businesses (target: > 3 %) in relation to marine estate management		NSW public service procurement data	Annual	
			Number of Aboriginal people employed in roles at DPI-F in relation to management of the marine estate:		NSW public service employment data	Annual	Staff are willing to self-identify as being Aboriginal. Measure can be reported without breaching privacy.
			- Permanent positions (FTE)				
			- Short-term contracts (<12 months)				
			- Longer contracts (12+ months)				
Number of participants in courses or training supported by Initiative 4 who have secured employment in related fields within 5 years of completing the course/training	Post-training survey or other follow-up discussions (formal or informal)	Irregularly and opportunistically (post-event), collated annually	Initiative 4 staff can remain in contact with course/training participants.				
Number of Aboriginal-owned tourism businesses providing services in relation to the NSW marine estate	Visit NSW ( <a href="https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours">https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours</a> ), or through direct contact with Visit NSW	Annual	Relevant businesses list themselves through Visit NSW. Listed businesses provide a suitable sample to identify change over time.				
Number of Aboriginal-owned businesses providing services to marine commercial industries, including aquaculture and commercial wild harvest.	ABS data	Annual	Relevant businesses list themselves through Visit NSW. Listed businesses provide a suitable sample to identify change over time.				

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)	KPI 13: Community members report awareness and appreciation of the significance of Sea Country values	Community members, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future.	Proportion of survey participants reporting awareness and appreciation (%)	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)	LI 17: Responsible and related agencies recognise and demonstrate understanding of Aboriginal cultural values, roles and responsibilities in managing Sea Country	Includes: - Areas of responsibilities and geographic regions - native title status - MOUs  Related agencies include: - LLS, DPE Water, Crown Lands, EPA, NRAR, Heritage NSW, Local governments	Proportion of survey respondents demonstrating clarity	DPI-F (Initiative 4 lead)  Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Increased opportunities for Aboriginal people to derive economic benefit from the NSW marine estate (4F)	KPI 7: Aboriginal employment and opportunities in relation to the marine estate	Responsible agencies: the four MEMA agencies Related agencies include other delivery partners, such as LLS, DPE Water, Crown Lands, EPA, NRAR, Heritage NSW, LGAs (do employ and award contracts to aboriginal organisations).  Employment opportunities include: - Fox Control Program - Bush regeneration works - Pest and weed works - Other on-ground activities - Professional services  Capacity building courses and training opportunities include: - Deckhand and Coxswain courses - Education programs	Number and total value of contracts awarded to Aboriginal-owned entities by responsible and related agencies for services in relation to marine estate management	DPI-F (Initiative 4 lead)	NSW public service procurement data	Annual	
			Number of Aboriginal-owned entities that are registered suppliers with responsible and related agencies for provision of services in relation to marine estate management		NSW public service procurement data	Annual	
			Number of Aboriginal-owned entities that have been contracted by responsible and related agencies to provide services in relation to marine estate management		NSW public service procurement data	Annual	
			Proportion of addressable spend to Aboriginal businesses (target: > 1 %) in relation to marine estate management		NSW public service procurement data	Annual	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
			Proportion of goods and services contracts to Aboriginal businesses (target: > 3 %) in relation to marine estate management		NSW public service procurement data	Annual	
			Number of Aboriginal people employed in roles at DPI-F in relation to management of the marine estate: - Permanent positions (FTE) - Short-term contracts (<12 months) - Longer contracts (12+ months)		NSW public service employment data	Annual	Staff are willing to self-identify as being Aboriginal. Measure can be reported without breaching privacy.
			Number of participants in courses or training supported by Initiative 4 who have secured employment in related fields within 5 years of completing the course/training		Post-training survey or other follow-up discussions (formal or informal)	Irregularly and opportunistically (post-event), collated annually	Initiative 4 staff can remain in contact with course/training participants.
			Number of Aboriginal-owned tourism businesses providing services in relation to the NSW marine estate		Visit NSW ( <a href="https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours">https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours</a> ), or through direct contact with Visit NSW	Annual	Relevant businesses list themselves through Visit NSW. Listed businesses provide a suitable sample to identify change over time.
			Number of Aboriginal-owned businesses providing services to marine commercial industries, including aquaculture and commercial wild harvest.		ABS data	Annual	Relevant businesses list themselves through Visit NSW. Listed businesses provide a suitable sample to identify change over time.
Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)	LI 13: Aboriginal group or individual participation in Sea Country management, planning and monitoring	Includes participation in relation to: - representation on marine estate advisory committees - direct employment with responsible and related agencies in roles relating to the marine estate - Sea Country ranger programs - Aboriginal Advisory Groups related to the marine estate - MOUs in relation to the marine estate	Number of Aboriginal representatives on marine estate advisory committees	DPI-F (Initiative 4 lead)	Administrative data	Annual	
			Number of Aboriginal Advisory Groups related to the marine estate				
			Number of Aboriginal participants in events, activities or programs involving Initiative 4				

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		- events, activities or programs run by Initiative 4 including elders Olympics, knockout.	Number of marine fauna responses that include Aboriginal representatives	Initiative 5 lead, in conjunction with Initiative 4 lead	Administrative data	Annual	Requires coordination with Initiative 5 to engage Aboriginal representatives in marine fauna responses
Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)	LI 31: Increased inclusion of Aboriginal people and cultural values in decision-making processes for the marine estate	Includes decision-making processes in relation to the delivery of the MEMS and other government programs that relate to the marine estate.  Aboriginal representatives refers to the relevant local Aboriginal groups, and may include LALCs, Aboriginal corporations, Elder groups, Land Councils and prescribed Body Corporates under native title act in design and delivery	Number of Aboriginal people employed in middle to upper management roles within responsible and related agencies in relation to the marine estate	DPI-F (Initiative 4 lead)	NSW public service employment data	Annual	Staff are willing to self-identify as being Aboriginal. Measure can be reported without breaching privacy.
			Number of strategies, plans and programs developed and implemented by responsible agencies in relation to the marine estate with appropriate inclusion of Aboriginal representatives and cultural values	DPI-F (Initiative 4 lead)	Administrative data	Irregularly and opportunistically (post-process), collated annually	Strategy, plan or program leaders document Aboriginal engagement process, including how outcomes from that process are reflected in the final deliverable.
			Proportion of respondents reporting satisfaction with inclusion of Aboriginal people and cultural values in decision-making processes	Stakeholder Survey Coordinator	Targeted stakeholder survey / post-process survey	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)  Surveys post event/activity – Irregularly and opportunistically, collated annually	
Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)	LI 14: Number of Sea Country areas under management agreements	Agreements include: - Memorandums of Understanding (MOUs) - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans (LMPs)	Number of land/water areas covered by management agreements	DPI-F (Initiative 4 lead)	Administrative data	Annual	

Table 22 Indicators and associated details for long-term outcomes for Initiative 4

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
The broader NSW community has a greater appreciation of the significance of Sea Country for Aboriginal people (4D)	KPI 13: Community members report awareness and appreciation of the significance of Sea Country values	Community members, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future.	Proportion of survey participants reporting awareness and appreciation (%)	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Aboriginal people derive greater economic benefit from the marine estate (4C)	KPI 7: Aboriginal employment and opportunities in relation to the marine estate	<p>Responsible agencies: the four MEMA agencies Related agencies include other delivery partners, such as LLS, DPE Water, Crown Lands, EPA, NRAR, Heritage NSW, LGAs (do employ and award contracts to aboriginal organisations).</p> <p>Employment opportunities include: - Fox Control Program - Bush regeneration works - Pest and weed works - Other on-ground activities - Professional services</p> <p>Capacity building courses and training opportunities include: - Deckhand and Coxswain courses - Education programs</p>	Number and total value of contracts awarded to Aboriginal-owned entities by responsible and related agencies for services in relation to marine estate management	DPI-F (Initiative 4 lead)	NSW public service procurement data	Annual	
			Number of Aboriginal-owned entities that are registered suppliers with responsible and related agencies for provision of services in relation to marine estate management		NSW public service procurement data	Annual	
			Number of Aboriginal-owned entities that have been contracted by responsible and related agencies to provide services in relation to marine estate management		NSW public service procurement data	Annual	
			Proportion of addressable spend to Aboriginal businesses (target: > 1 %) in relation to marine estate management		NSW public service procurement data	Annual	
			Proportion of goods and services contracts to Aboriginal businesses (target: > 3 %) in relation to marine estate management		NSW public service procurement data	Annual	
			Number of Aboriginal people employed in roles at DPI-F in relation to management of the marine estate: - Permanent positions (FTE) - Short-term contracts (<12 months) - Longer contracts (12+ months)		NSW public service employment data	Annual	Staff are willing to self-identify as being Aboriginal. Measure can be reported without breaching privacy.

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
			Number of participants in courses or training supported by Initiative 4 who have secured employment in related fields within 5 years of completing the course/training		Post-training survey or other follow-up discussions (formal or informal)	Irregularly and opportunistically (post-event), collated annually	Initiative 4 staff can remain in contact with course/training participants.
			Number of Aboriginal-owned tourism businesses providing services in relation to the NSW marine estate		Visit NSW ( <a href="https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours">https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours</a> ), or through direct contact with Visit NSW	Annual	Relevant businesses list themselves through Visit NSW. Listed businesses provide a suitable sample to identify change over time.
			Number and total value of contracts awarded to Aboriginal-owned entities by responsible and related agencies for services in relation to marine estate management		NSW public service procurement data	Annual	
Reduced threats to Aboriginal cultural heritage and use in the marine estate (4B)	KPI 19: Reduction in TARA risk levels relating to Aboriginal cultural heritage and use	Inputs that demonstrate reducing the threat to Aboriginal cultural heritage and use  Indicator results to be accompanied by narrative that explains risk rating/assessment.	Reduction in risk ratings for threats to Aboriginal cultural heritage and use (proportion of risk levels maintained or reduced)	DPI-F (Initiative 4 lead)	Threat and Risk Assessment (TARA), baseline and TARA reviews	With each review of the TARA (5 yearly)	
Improved Aboriginal satisfaction with Sea Country management (4A)	KPI 6: Aboriginal people report satisfaction with Sea Country management	KPI to focus on satisfaction with processes. Measurement of this KPI will focus on those involved in programs, initiatives or activities that result from the framework for effective and appropriate Aboriginal involvement in Sea Country management and decision-making, and the integrated Aboriginal engagement model for participation in Sea Country management, planning and monitoring, both to be developed through Initiative 4. Measures may also be informed by the Aboriginal engagement model, once completed.	Average satisfaction rating based on Likert scale	DPI-F (Initiative 4 lead)	Post-training survey or other follow up discussions		

## Initiative 5 – Reducing impacts on threatened and protected species

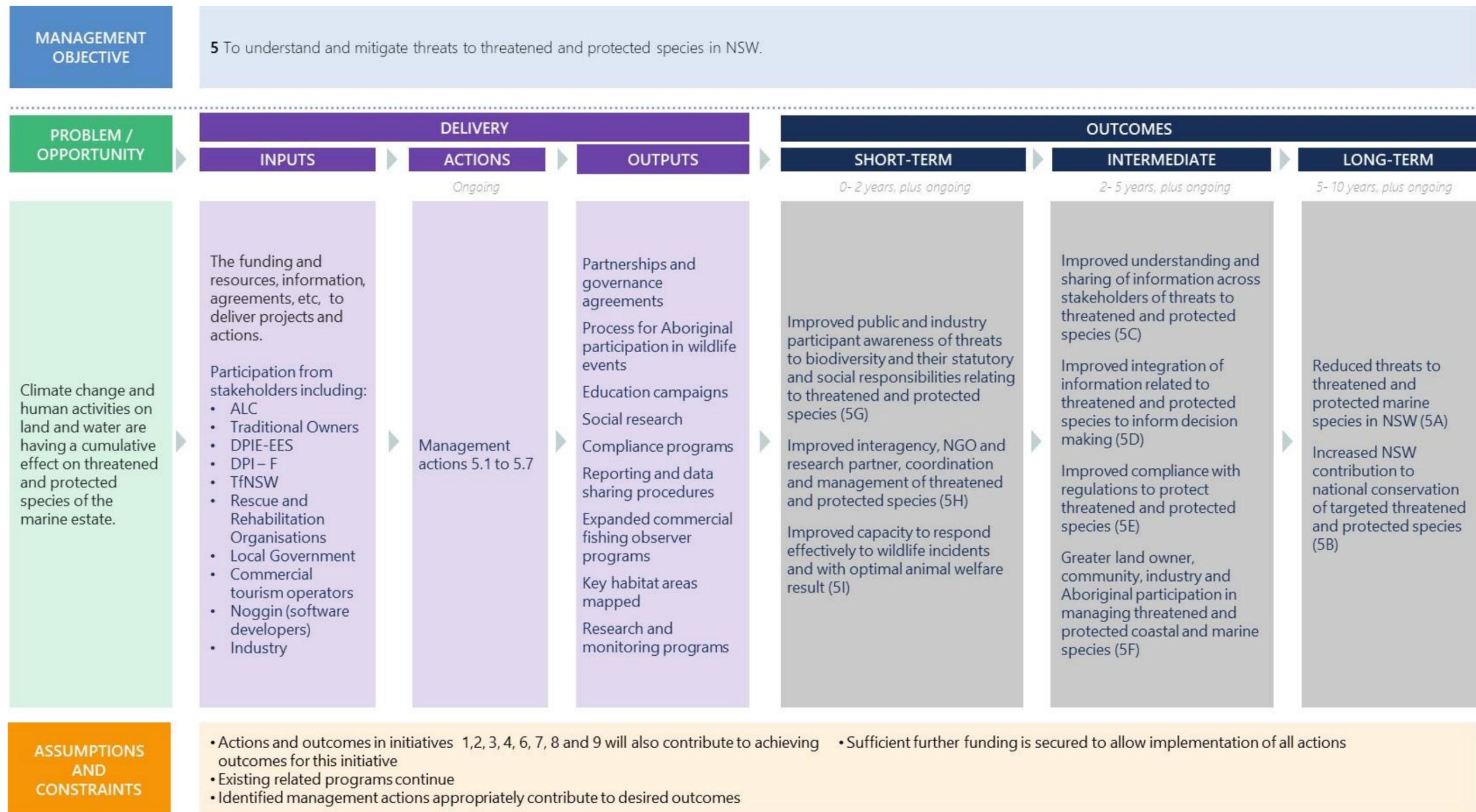


Figure 17 Program logic for Initiative 5

OUTCOME CODE	5I	5H	5G	5F	5E	5D	5C	5B	5A
<b>OUTCOME</b>	Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result	Improved interagency, NGO and research partner, coordination and management of threatened and protected species	Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species	Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species	Improved compliance with regulations to protect threatened and protected species	Improved integration of information related to threatened and protected species to inform decision making	Improved understanding and sharing of information across stakeholders of threats to threatened and protected species	Increased NSW contribution to national conservation of targeted threatened and protected species	Reduced threats to threatened and protected marine species in NSW
<b>OUTCOME TIMEFRAME</b>	<i>Short-term</i>	<i>Short-term</i>	<i>Short-term</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Long-term</i>	<i>Long-term</i>
<b>OUTCOME INDICATORS</b>	LI 33, LI 32, LI 29	LI 5, LI 29	LI 21, LI 10	LI 13, LI 22, LI 26	LI 12	LI 7	LI 8	KPI 5	KPI 17

**MANAGEMENT ACTIONS**

5.1		<b>LI 5, LI 29</b>						KPI 5	KPI 17
5.2								KPI 5	KPI 17
5.2 (a)	<b>LI 33, LI 32, LI 29</b>	<b>LI 5, LI 29</b>						KPI 5	KPI 17
5.2 (b)	<b>LI 33, LI 32, LI 29</b>	<b>LI 5, LI 29</b>						KPI 5	KPI 17
5.2 (c)	<b>LI 33, LI 32, LI 29</b>	<b>LI 5, LI 29</b>						KPI 5	KPI 17
5.2 (d)				<b>LI 13, LI 22, LI 26</b>				KPI 5	KPI 17
5.3			<b>LI 21, LI 10</b>		<b>LI 12</b>			KPI 5	KPI 17
5.4						<b>LI 7</b>	<b>LI 8</b>	KPI 5	KPI 17
5.5	<b>LI 33, LI 32, LI 29</b>		<b>LI 21, LI 10</b>			<b>LI 7</b>		KPI 5	KPI 17
5.6			<b>LI 21, LI 10</b>	<b>LI 13, LI 22, LI 26</b>				KPI 5	KPI 17
5.7						<b>LI 7</b>	<b>LI 8</b>	KPI 5	KPI 17

Figure 18 Action – outcome map for Initiative 5

Table 23 Indicators and associated details for short-term outcomes for Initiative 5

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result (5I)	LI 33: Optimal animal welfare results following a wildlife incident involving a threatened or protected species	About demonstrating improved animal welfare outcomes	Proportion of respondents to after-action surveys reporting that optimal animal welfare was achieved	DPE-EHG (Initiative 5 lead)	After-action surveys/reviews	Irregularly and opportunistically (post-event), collated annually	After-action survey/review process captures information to inform indicator. After-action reviews continue to be conducted following all significant wildlife incidents. Survey/review participants self-assessment is a suitable reflection.
Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result (5I)	LI 32: Responsible agencies demonstrate improved processes and capacity to respond to wildlife incidents	About improved capacity, response, timeliness and adoption of recommendations into improved processes from events.	Proportion of recommendations from after-action reviews implemented in incident response process	DPE-EHG (Initiative 5 lead)	After-action surveys/reviews	Irregularly and opportunistically (post-event), collated annually	After-action survey/review process captures information to inform indicator. After-action reviews continue to be conducted following all significant wildlife incidents. Survey/review participants self-assessment is a suitable reflection.
Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result (5I)	LI 29: Responsible agencies, related agencies and targeted stakeholders proactively and effectively contribute to Elements system for managing threatened and protected species		Number of agencies contributing data and records to Elements database (# per year)	DPE-EHG (Initiative 5 lead)	Administrative data (Elements)	Ongoing collection, collated annually	Number of agencies contributing reflects right organisations participating in wildlife event.  Contribution of quality data reflects effectiveness of response.  Data is reviewed for quality.
			Proportion of new data records that meet quality standards (% per year)				
Improved interagency coordination and management of threatened and protected species. (5H)	LI 5: Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for	Activities include those relating to: - Threatened and protected species  Targeted stakeholders include:	Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)	DPE-EHG (Initiative 5 lead)	Pre and post workshop/training event survey to demonstrate increased collaboration among agencies	Irregularly and opportunistically (post-event), collated annually	Post-event surveys are conducted following suitable samples of workshops, seminars, training, etc.

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
	managing the marine estate	- Local councils - State government agencies	Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)	DPE-EHG (Initiative 5 lead)	After-action surveys/reviews to demonstrate increased collaboration among agencies	Irregularly and opportunistically (post-event), collated annually	After action reviews capture interagency relationships and can show change over time. There is now a communication pathway in incident response, how we numerical assign, time and style of sharing, who. Staff surveys could show this change but may underrepresent it (sample size, scope, questions)
			Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)	Agency Staff Survey Coordinator	Responsible Agency Staff Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Improved interagency coordination and management of threatened and protected species. (5H)	LI 29: Responsible agencies, related agencies and targeted stakeholders proactively and effectively contribute to Elements system for managing threatened and protected species		Number of agencies contributing data and records to Elements database (# per year)	DPE-EHG (Initiative 5 lead)	Administrative data (Elements)	Ongoing collection, collated annually	Number of agencies contributing reflects right organisations participating in wildlife event.  Contribution of quality data reflects effectiveness of response.  Data is reviewed for quality.
			Proportion of new data records that meet quality standards (% per year)				
Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)	LI 21: Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Activities include those relating to: - threatened and protected species  Targeted stakeholders include: - Local councils - State government agencies	Proportion of survey respondents demonstrating clarity (%)	DPE-EHG (Initiative 5 lead)	Post event surveys/review - scope to iterate these over time after attempting to implement after actions reviews to elicit these metrics	Irregularly and opportunistically (post-event), collated annually	Post workshop/event surveys capture changes understanding to capture change in public and industry understanding over time.
			Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)		After-action surveys/reviews	Irregularly and opportunistically (post-event), collated annually	After-action survey/review process captures information to inform indicator.

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)	LI 10: Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	Includes threats relating to threatened and protected species.  Targeted stakeholders include the community, state and local government, rescue and rehabilitation groups, fishers, land owners, tourism operators, recreational boaters	Proportion of survey respondents demonstrating awareness	DPI-F (Initiative 8 lead) - Community  DPE-EHG (Initiative 5 lead)	Coastal Residents Survey and Visitors Survey  Pre and Post workshop/event surveys to demonstrate increased understanding/information.	Irregularly and opportunistically (post-event), collated annually	

Table 24 Indicators and associated details for intermediate outcomes for Initiative 5

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)	LI 13: Aboriginal group or individual participation in Sea Country management, planning and monitoring		Extent of coastline with cultural protocols developed and in effect for marine strandings	DPE-EHG (Initiative 5 lead)	Administrative data	Irregularly and opportunistically (post-event), collated annually	
			Number of marine mammal strandings responses that include Aboriginal representatives				
			Number of trainings in mammal stranding responses of Traditional Owners or Aboriginal people				
Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)	LI 22: Community and stakeholder participation in management of the marine estate including filling knowledge gaps	Includes participation in activities relating to habitat modification, local Aboriginal community involvement in marine wildlife events, planning approvals.  Relevant codes of practice include: TBC  Relevant citizen science programs include those that relate to management and	Number of signatories to codes of practice	DPE-EHG (Initiative 5 lead)	Administrative data (compliance, Elements)  Documentation from compliance operations	Ongoing, collated annually	
			Number of industry participants in gear trials				
			Number of fishers than participate in observer-based surveys (volunteer based)				
			Number of agency-funded relevant citizen science programs				
			Number of registered volunteers participating in wildlife rescues				

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		conservation of threatened and protected species  Stakeholders include Aboriginal communities, land owners, community, industry, state and local government	Number of agencies contributing to Elements database				
Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)	LI 26: Community and stakeholder satisfaction with experience participating in the management of the marine estate		Proportion of participants reporting willingness to participate again in the future (%)	DPI-F (Initiative 5 lead); Stakeholder survey coordinator	Post event/activity participant survey, documented in administrative data;	Irregularly and opportunistically (post-event), collated annually	Willingness to participant again is an indication of satisfaction with the experience. Survey may also ask reasons for why / why not to clarify.
Improved compliance with regulations to protect threatened and protected species (5E)	LI 12: Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	Activities include those relating to threatened and protected species under the BC Act and threatened species under the FM Act.  Specific rules, regulations and guidelines include those relating to: - Approach distances to marine mammals. - Gear - Restricted areas  Targeted stakeholders include: Commercial wildlife watching tourism operators, fishers, recreational boaters, general members of the public	Proportion of recreational boaters demonstrating understanding of rules relating to distances and disturbances to threatened and protected species	DPE-EHG (Initiative 5 lead)	Survey – recreational boaters at boat show	Irregularly and opportunistically (post-event), collated annually	
			Number of fishers caught in restricted or protected areas (for threatened or protected species)		Targeted place based pre and post management intervention response (e.g., new signs pre and post)	Ongoing, collated annually	
			Rate of non-compliance with regulations for threatened and protected species (Proportion of non-compliant stakeholders per capita)		Commercial operators audit results	Ongoing, collated annually	
			Proportion of compliant whale and dolphin watching operators per compliance operation		Commercial operators audit results	Ongoing, collated annually	
Improved integration of information related to threatened and protected species to inform decision making (5D)	LI 7: Agency staff report using information relating to social, cultural, economic and environmental values in their strategies,	Includes incorporation throughout planning, implementation and reporting of: - Community objectives and values - Aboriginal objectives, values,	Rate of agency staff reporting use of information relating to social, cultural, economic and environmental values	Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
	plans, programs and decision-making processes	rights and interests - Unintended consequences of programs and plans - Economic benefits/costs  Relevant strategies. Plans, programs and processes include (but not limited to): - Managing threatened and protected species					
Improved understanding and sharing of information across stakeholders of threats to threatened and protected species (5C)	LI 8: New or improved processes or events for sharing knowledge among responsible agencies, and between responsible agencies and targeted stakeholders and the community	Includes knowledge sharing in relation to: - Threatened and protected species - Impacts of climate change	Number of new or improved processes, networks or events	DPE-EHG (Initiative 5 lead)	Administrative data	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Table 25 Indicators and associated details for long-term outcomes for Initiative 5

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Increased NSW contribution to national conservation of targeted threatened and protected species (5B)	KPI 5: NSW contribution to national body of knowledge, approaches and plans for conservation of targeted threatened and protected species	Includes coastal and marine species listed as threatened and protected under the Biodiversity Conservation Act 2016 and threatened under the Fisheries Management Act 1994.	Number of methods or processes that were led or influenced by NSW that can be applied interstate or nationally.	DPE-EHG (Initiative 5 lead) in collaboration with DPI-F	Administrative data	Ongoing, collated annually	
			Proportion of national species plans developed in which NSW is a signatory or partner				
			Number of programs, guidelines or codes of practice for threatened and protected species developed by NSW that are adopted by other jurisdictions.				
			Number of occasions where other jurisdictions seek advice from NSW on matters relating to threatened and protected species.				
			Number of publications relating to threatened and protected species where NSW is a lead contributor.				

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Reduced threats to threatened and protected marine species in NSW (5A)	KPI 17: Risk rating to threatened and protected species in the NSW marine estate	Inputs that demonstrate reducing the threat to protected species regardless of the future level of risk. To provide narrative behind to justify that risk rating/assessment including TARA threat ratings.	Reduction in risk ratings for threats to threatened and protected species (proportion of risk ratings maintained or reduced)	DPE-EHG (Initiative 5 lead)	TARA – baseline and TARA reviews	With each review of the TARA (5 yearly)	

## Initiative 6 – Ensuring sustainable fishing and aquaculture

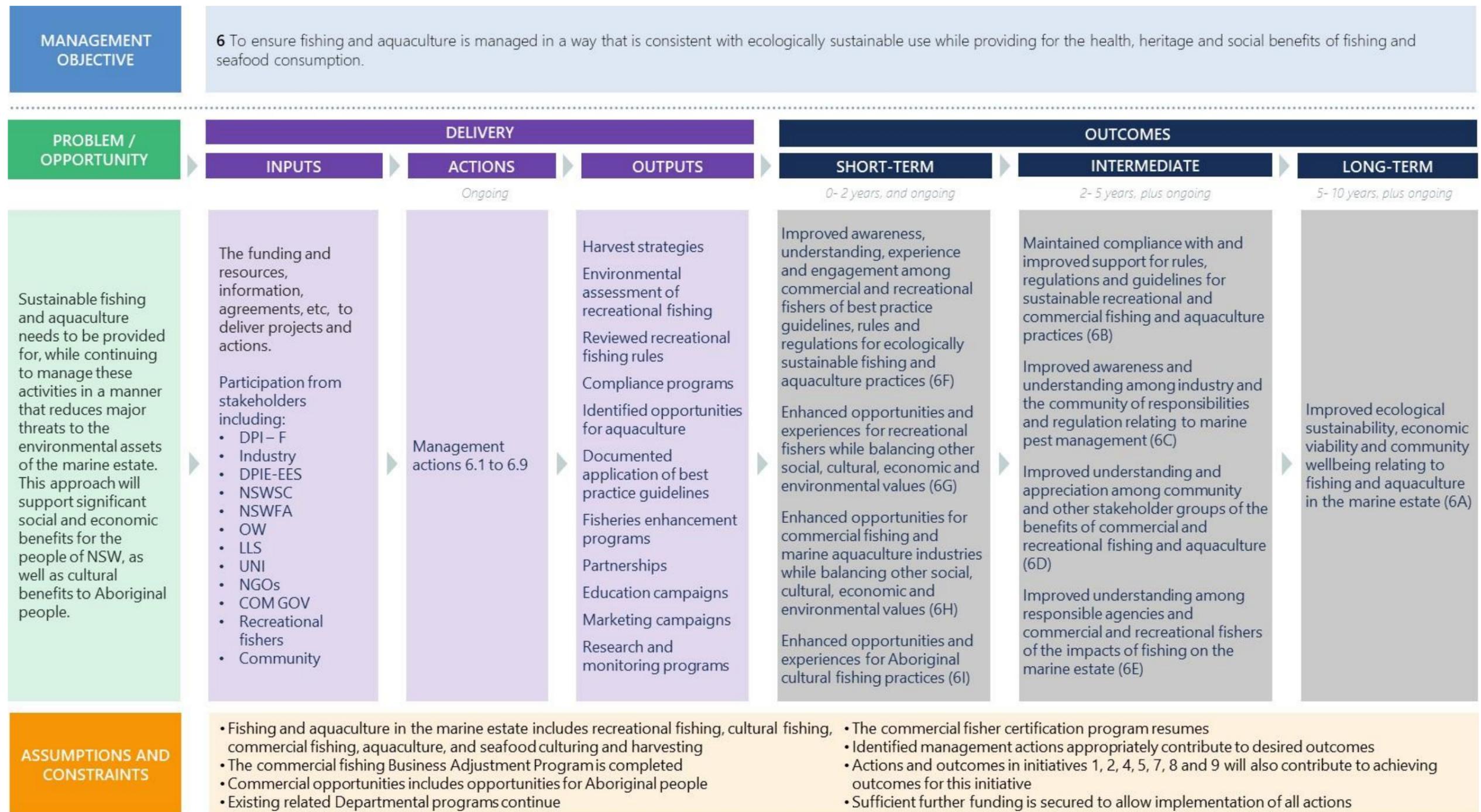


Figure 19 Program logic for Initiative 6

OUTCOME CODE	6I	6H	6G	6F	6E	6D	6C	6B	6A
OUTCOME	Enhanced opportunities and experiences for Aboriginal cultural fishing practices	Enhanced opportunities for commercial fishers and marine aquaculture while balancing other social, cultural, economic and environmental values	Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values	Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best-practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices	Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing and aquaculture on the marine estate	Improved understanding and appreciation among community and other stakeholder groups of the benefits of fishing and aquaculture	Improved awareness and understanding among industry and the community of responsibilities and regulation relating to marine pest management	Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices	Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate
OUTCOME TIMEFRAME	Short-term	Short-term	Short-term	Short-term	Intermediate	Intermediate	Intermediate	Intermediate	Long-term
OUTCOME INDICATORS	LI 23	LI 23	LI 23	LI 21	LI 25	LI 27	LI 21	LI 18	KPI 8

**MANAGEMENT ACTIONS**

6.1	LI 23	LI 23	LI 23	LI 21	LI 25				KPI 8
6.2				LI 21	LI 25				KPI 8
6.3		LI 23							KPI 8
6.4		LI 23							KPI 8
6.5					LI 25				KPI 8
6.6			LI 23						KPI 8
6.7	LI 23	LI 23	LI 23	LI 21	LI 25			LI 18	KPI 8
6.8		LI 23				LI 27			KPI 8
6.9							LI 21		KPI 8

Figure 20 Action – outcome map for Initiative 6

Table 26 Indicators and associated details for short-term outcomes for Initiative 6

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Enhanced opportunities and experiences for Aboriginal cultural fishing practices (6I)	LI 23: Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	Activities include those relating to: cultural fishing,  Targeted stakeholders include: - Aboriginal communities/committees/representative groups	Proportion of survey respondents reporting enhanced opportunities and experiences (%)			Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	
Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)	LI 23: Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	Activities include those relating to: commercial fishing and aquaculture,  Targeted stakeholders include: - Industry stakeholders (commercial fishers, seafood businesses, and aquaculture ventures)	Proportion of survey respondents reporting enhanced opportunities and experiences (%)	Agency Staff Survey Coordinator  Targeted stakeholder survey Coordinator	Targeted stakeholder survey (coordinated by Agency Staff Survey Coordinator)	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	
			Additional measures from aquaculture production (economic) reports to show steady or increasing farm gate value <i>Note: aquaculture team has requested Stage 3 funds for further economic valuation data to indicate steady or increasing value to the community/state/nation</i>	DPI-F (Initiative 6 lead) in conjunction with DPI Fisheries and Aquaculture Management Unit	Aquaculture Production Reports  Aquaculture Stage 3 economic valuation analysis	Annual production reports  Stage 3 economic valuation would be biennial	
			Potential additional measures to be identified from socio-economic surveys currently underway for commercial fishing (i.e., % survey respondents reporting satisfaction with commercial fishing activities)	DPI-F (Initiative 6 lead) in conjunction with DPI Fisheries and Aquaculture Management Unit	New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishing)	Commercial – annual from 2021-23 (stage 3 funding requested to continue through 2028)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)	LI 23: Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	Activities include those relating to: recreational fishing,  Targeted stakeholders include: - Recreational fishing licence holders - Recreational fishing committees/representative groups	Proportion of survey respondents reporting enhanced opportunities and experiences (%)	Stakeholder survey coordinator	Targeted stakeholder survey (coordinated by Agency Staff Survey Coordinator)	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	
			Proportion of recreational fishing survey respondents reporting satisfaction with fishing activity (%)	DPI-F (Initiative 6 lead) in conjunction with DPI Fisheries and Aquaculture Management Unit	Rec Fishing Monitoring Program (RFMP) phone-diary 'Washup Survey'	Biennial	
			Additional measures may be identified from the Rec fish licence fee survey (RLHS) – informal survey of licence holders on their satisfaction of enhancement programs, this is normally trust based (i.e., % satisfaction with enhancement programs /opportunities, angler access etc.)	DPI-F (Initiative 6 lead) in conjunction with DPI Fisheries and Aquaculture Management Unit	Recreational licence holders survey (RLHS)	RLHS is done every 3 years. Next one is due in 2021/22	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices (6F)	LI 21: Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	<p>Activities include those relating to: commercial fishing, aquaculture, and recreational fishing.</p> <p>Specific rules, regulations, guidelines and best practice approaches include:  - Best practice for responsible fishing (e.g., through live streams and other social media education campaigns)</p> <p>Targeted stakeholders include:  - Industry stakeholders (commercial fishers and aquaculture ventures)  - Recreational fishers  - Boat Owners</p>	Proportion of survey respondents reporting awareness and clarity (%)	DPI-F (Initiative 8 lead) - Community  Targeted stakeholder Survey Coordinator	Coastal Residents Survey and Visitors Survey  Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	<p>Rec fishers reporting unlawful catch (i.e., exceeding bag limits or threatened and protected species) through the RFMP do not have an understanding or knowledge that their actions were unlawful / unethical</p> <p>Rec fishers reporting through the RLHS that indicate support for rec fish trust funds to be used for enforcement have an understanding and appreciation of rules / regs and best practice</p>

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
			<p>Additional measures relating to understanding of threats and benefits of fishing will be further refined as data collection processes are developed. These will may be identified from:</p> <p>RFMP phone-diary survey - % of events where rec fishers exceeded bag limit , retention of protected species</p> <p>Rec fish licence fee survey (RLHS) - informal survey of licence holders on their satisfaction of enhancement programs, (i.e. % believe enforcement of fishing rules should be done)</p> <p>Response to questions on compliance and understanding of rules from commercial fishing socio-economic surveys (i.e. % agree they have understanding)</p> <p>% Good understanding of rules (by commercial fishers during compliance inspections)</p>	DPI-F (Initiative 6 lead) in conjunction with Fisheries and Aquaculture Management Unit, and DPI-F Compliance	<p>Recreational licence holders survey (RLHS)</p> <p>New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishing)</p> <p>DPI-F Compliance inspections – Compliance Unit database</p>	<p>Biennial</p> <p>RLHS is done every 3 years. Next one is due in 2021/22</p> <p>Annual from 2021-23 (stage 3 funding requested to continue through 2028)</p>	

Table 27 Indicators and associated details for intermediate outcomes for Initiative 6

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing on the marine estate (6E)	LI 25: Responsible agencies and targeted stakeholders demonstrate awareness of benefits of, and threat to, the marine estate	Includes threats and benefits relating to fishing and aquaculture.  Targeted stakeholders include: - Industry stakeholders (commercial fishers, aquaculturalists) - Recreational fishers	Proportion of survey respondents demonstrating awareness of impacts (%)	Agency Staff Survey Coordinator	Agency Staff Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	Rec fishers reporting through the RLHS that indicate support for rec fish trust funds to be used for enforcement have an understanding of impacts of recreational fishing
			<i>Additional measures relating to understanding of threats and benefits of fishing may be identified from:</i>				
			Rec fish licence fee survey (RLHS) - informal survey of licence holders on their satisfaction of enhancement programs, (i.e., % believe enforcement of fishing rules should be done)	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit	Recreational licence holders survey (RLHS)	RLHS is done every 3 years. Next one is due in 2021/22	
			Response to questions on understanding/capacity building from commercial fishing socio-economic surveys (i.e., % agree they have sufficient training and advice about good fishing practices)		New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishing)	Annual from 2021-23 (stage 3 funding requested to continue through 2028)	
			Environmental Assessment and Recreational Fishing Management Strategy evaluation and monitoring program <sup>1</sup>		Environmental Assessment and Recreational Fishing Management Strategy evaluation and monitoring program is Stage 3 dependent	Annual (if funded in Stage 3)	
Improved understanding and appreciation among community and other stakeholder groups of the benefits of	LI 27: Community members report awareness and appreciation of the benefits and significance of commercial and	Stakeholder survey questions for LI 10 will also ask about awareness of benefits of commercial and recreational fishing and aquaculture. For example, recreational fishers will be asked about their awareness of the benefits associated with commercial fishing, etc.	Proportion of survey participants reporting awareness and appreciation of benefits and significance (%)	DPI-F (Initiative 8 lead) - Community Stakeholder survey coordinator	Coastal Residents Survey and Visitor Survey Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	

<sup>1</sup> Assumption that stage 3 funding is obtained for evaluation and monitoring.

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
commercial and recreational fishing and aquaculture (6D)	recreational fishing and aquaculture		Additional measures relating to appreciation and understanding of benefits of fishing and aquaculture may be identified New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishers) (i.e., importance of fishing to survey participants) (in progress)		New South Wales Fisheries Economic and Social Indicator Monitoring (BDO survey commercial fishing)	Biennial  Commercial – annual from 2021-23 (stage 3 funding requested to continue through 2028)	
Improved awareness and understanding among industry and the community of responsibilities and regulation relating to marine pest management (6C)	LI 21: Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	<p>Activities include those relating to: commercial fishing and aquaculture, recreational fishing.</p> <p>Specific rules, regulations, guidelines and best practice approaches include:</p> <ul style="list-style-type: none"> <li>- Biosecurity Plan</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Boat owners berthed within marine estate waters e.g., fishing charter, recreational boating, sailing, racing, etc</li> <li>- Commercial fishers / industry</li> <li>- Recreational fishers / industry</li> <li>- Aquaculture industry</li> <li>- Community</li> </ul>	Proportion of survey respondents reporting awareness and clarity (%)	<p>Agency Staff Survey Coordinator</p> <p>DPI-F (Initiative 6 lead) in conjunction with Biosecurity</p>	<p>Targeted stakeholder survey (Agency Staff Survey Coordinator)</p> <p>The Monitoring and Evaluation follow-up survey to Marine Biosecurity Awareness Project.</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	<p>Rec fishers reporting unlawful catch (i.e., exceeding bag limits or threatened and protected species) through the RFMP do not have an understanding or knowledge that their actions were unlawful / unethical</p> <p>Rec fishers reporting through the RLHS that indicate support for rec fish trust funds to be used for enforcement have an understanding and appreciation of rules / regs and best practice</p>
Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices (6B)	LI 18: Compliance with conditions in aquaculture permits and consents, and commercial and recreational fishing regulations	<p>Activities include those relating to: commercial fishing and aquaculture, recreational fishing.</p> <p>Specific rules, regulations, guidelines and best practice approaches include:</p> <ul style="list-style-type: none"> <li>- aquaculture permits and consents</li> <li>- commercial fishing regulations</li> <li>- recreational fishing regulations</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Recreational fishers</li> <li>- Commercial fishers</li> <li>- Aquaculturalists</li> </ul>	<p>% compliance during inspections on:</p> <ul style="list-style-type: none"> <li>- recreational fishers</li> <li>- Commercial fishers</li> <li>- Aquaculturalists</li> </ul> <p>% support for enforceable arrangements from commercial fishers (collected during inspections)</p>	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries Compliance Unit	Fisheries compliance records of infringements	Annual	The data is filtered for spatial extent of the NSW marine estate.

Table 28 Indicators and associated details for long-term outcomes for Initiative 6

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)	KPI 8: Trend in ecological sustainability, economic viability and community wellbeing measures for fishing and aquaculture	<p>Species stock status includes species for commercial, recreational and cultural fishing and harvesting. This may include tracking of species that are currently undefined or for which there is not yet data (to be confirmed). Stock status is progressively assessed.</p> <p>Routinely assessed at varying degrees of quality – can track stock status of relevant species.</p> <p>Commercial and recreational fishers, and aquaculturalists wellbeing considers wellbeing beyond economic factors.</p>	Index of species stock status (no. of stocks assessed vs no. of stocks sustainable/data deficient etc.) Note, measure is still in development. Stock status data is routinely assessed, however a sustainability index is in development.	DPI-F (Initiative 6 lead)	Status of Australian Fish Stocks Reports FRDC	Annual	Sustainability index can and will be developed by DPI-F Research team
			Measure to be developed relevant to recreational fishing wellbeing through the ecological risk assessment	TBC	Environmental Assessment and Recreational Fishing Management Strategy evaluation and monitoring program <sup>2</sup>	Annually (this hasn't commenced)	Stage 3 funding is obtained for evaluation and monitoring.
			Proportion of commercial fishing and aquaculture industry reporting improved sustainability and economic viability in the marine estate	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit	New South Wales Fisheries Economic and Social Indicator Monitoring (BDO survey)  Aquaculture Stage 3 economic valuation analysis <sup>3</sup>	Annual from 2021-23 (stage 3 funding requested to continue through 2028)	Stage 3 funding is obtained for evaluation and monitoring.
			Measure of commercial fisher wellbeing	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit	New South Wales Fisheries Economic and Social Indicator Monitoring (BDO survey)	Annual from 2021-23 (stage 3 funding requested to continue through 2028)	
			Recreational fishing participation (rate of participants per capita)	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit	Recreational Fishing Integrated Monitoring Program; (2K random selected diarists; charter boat data; some observer and creel survey data)	Biennial	

<sup>2</sup> Assumption that stage 3 funding is obtained for evaluation and monitoring.

<sup>3</sup> Assumption that stage 3 funding is obtained for evaluation.

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
			Proportion of recreational fishers reporting satisfaction with the quality of recreational fishing and experiences (%)	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit	Recreational Fisheries Monitoring Program; - phone-diary 'Washup Survey' - recreational fisher satisfaction Coastal Residents and Visitor Survey	Biennial, with three to five 3-5 phone-diary surveys over long term MIMP	
			Average expenditure per recreational fishing activity in NSW	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit	Recreational Fisheries Monitoring Program; (~2K randomly selected phone-diary survey participants; charter boat logbook data; charter boat observer monitoring data – visitors to regional areas)	Biennial, with 3-5 phone-diary surveys over long term MIMP	

## Initiative 7 – Enabling safe and sustainable boating

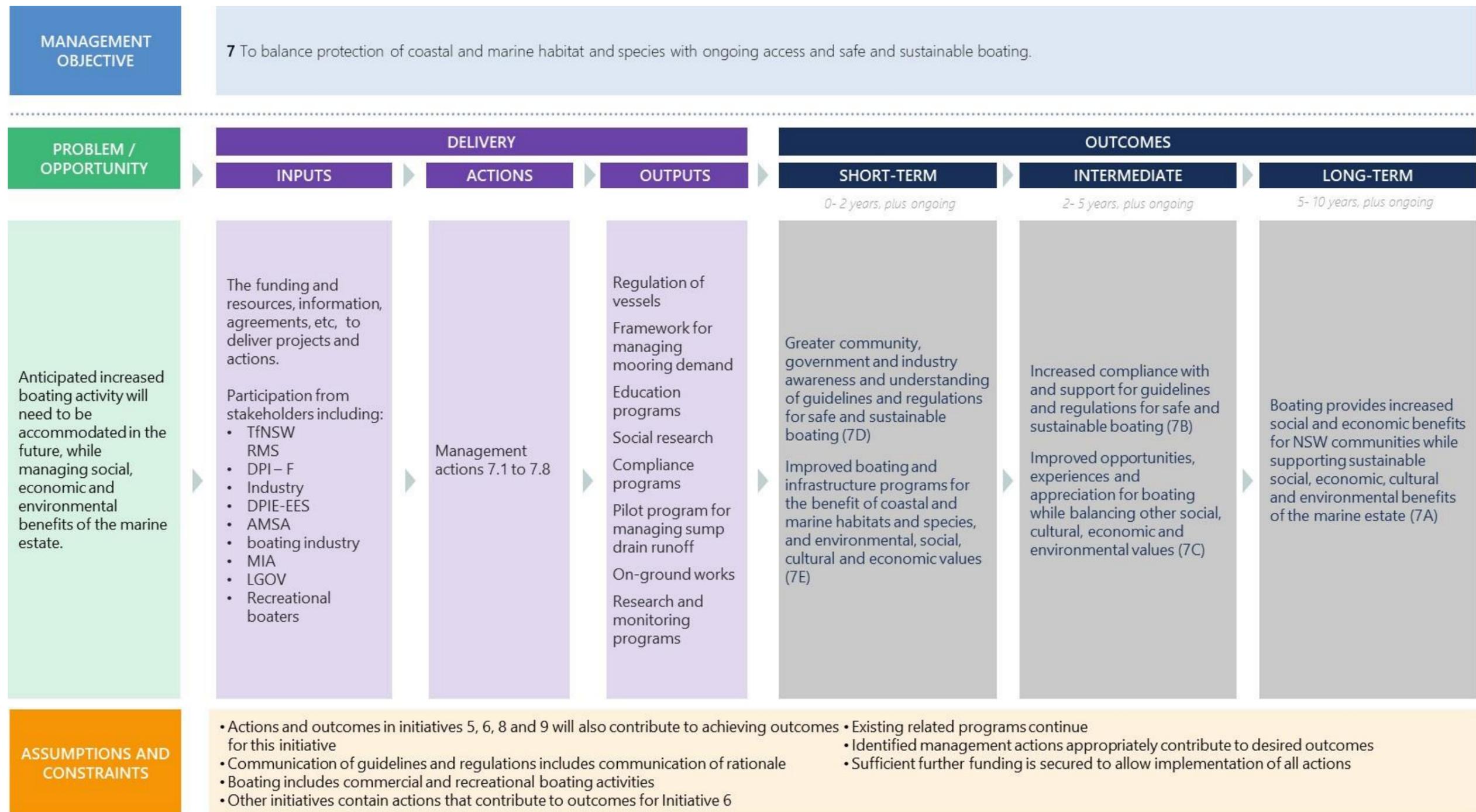


Figure 21 Program logic for Initiative 7

OUTCOME CODE	7E	7D	7C	7B	7A
OUTCOME	Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and social, cultural and economic values	Greater community, government and industry awareness and understanding of guidelines and regulations for safe and sustainable boating	Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values	Increased compliance with and support for guidelines and regulations for safe and sustainable boating	Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate
OUTCOME TIMEFRAME	<i>Short-term</i>	<i>Short-term</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Long-term</i>
OUTCOME INDICATORS	LI 19	LI 20	LI 20, LI 23	LI 12	KPI 9

MANAGEMENT ACTIONS					
7.1		LI 20		LI 12	KPI 9
7.2	LI 19		LI 20, LI 23		KPI 9
7.3		LI 20		LI 12	KPI 9
7.4	LI 19	LI 20			KPI 9
7.5		LI 20	LI 20, LI 23	LI 12	KPI 9
7.6			LI 20, LI 23	LI 12	KPI 9
7.7	LI 19				KPI 9
7.8			LI 20, LI 23		KPI 9

Figure 22 Action- outcome map for Initiative 7

Table 29 Indicators and associated details for short-term outcomes for Initiative 7

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values. (7E)	LI 19: Number of new maritime infrastructure projects delivering new or upgraded infrastructure to support improved waterways access	Measure of the number of projects delivered under the Boating Now infrastructure grants program	Number and value of projects delivered per annum under the Boating Now Program.	Initiative 7 Lead (TfNSW)	Boating Now program administrative data	Annual	
Greater community, government and industry awareness and understanding of guidelines and regulations for safe and sustainable boating (7D)	LI 20: Targeted stakeholders report awareness of, and attitudes that align with, safe and sustainable boating practices	<p>Measure boater's attitudes towards sustainable boating practices as part of the annual boater survey. Responses may be analysed and reported based on stakeholder groups.</p> <p>List of social media activities which constitute engagement:</p> <ul style="list-style-type: none"> <li>- Positive likes/reactions, comments or shares of relevant content</li> <li>- Downloads</li> <li>- QR codes</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Recreational boaters</li> <li>- Commercial boaters</li> <li>- General community through social media</li> </ul>	Proportion of survey respondents reporting awareness of and use of appropriate attitudes and behaviours.	Initiative 7 Lead (TfNSW)	Annual Boater Surveys (Recreational Boating Behaviour Report), (Boating Participation Survey)	Annual	
			Number of positive interactions through social media with content relating to safe and sustainable boating practices.		Administrative data from social media management	Measured irregularly, collated annually	
			Number of downloads of additional information relating to safe and sustainable boating practices via QR codes on printed materials and signs.		Administrative data from social media management	Measured irregularly, collated annually	

Table 30 Indicators and associated details for intermediate outcomes for Initiative 7

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved opportunities, experiences and appreciation for	LI 20: Targeted stakeholders report attitudes and awareness that	Measure boater's attitudes towards sustainable boating practices as part of the annual boater survey. Filter survey respondents based on stakeholder groups	Proportion of survey respondents reporting awareness of and use of appropriate attitudes and behaviours.	Initiative 7 Lead (TfNSW)	Annual Boater Surveys (Recreational Boating Behaviour Report), (Boating Participation Survey)	Annual	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
boating while balancing other social, cultural, economic and environmental values (7C)	align with safe and sustainable boating practices	through questionnaire i.e., commercial, recreational etc.	Number of positive interactions through social media with content relating to safe and sustainable boating practices.		Administrative data from social media management	Measured irregularly, collated annually	
			Number of downloads of additional information relating to safe and sustainable boating practices via QR codes on printed materials and signs.		Administrative data from social media management	Measured irregularly, collated annually	
Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)	LI 23: Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	<p>Activities include those relating to commercial and recreational boating, and reflect services and experiences such as:</p> <ul style="list-style-type: none"> <li>- Boat ramps</li> <li>- Other boating infrastructure</li> <li>- Access</li> <li>- Crowding</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Recreational boaters</li> <li>- Commercial boaters</li> <li>- Community</li> </ul>	Proportion of survey respondents reporting enhanced opportunities and experiences	Initiative 7 Lead (TfNSW)	Targeted stakeholder survey  Boating Now Survey  Recreational Boating Participation survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
			Proportion of survey respondents reporting satisfaction with different marine estate services				
			Number of social media posts or comments reporting positive experiences with boating in the marine estate.	Initiative 7 Lead (TfNSW)	Social media analytics	Measured irregularly, collated annually	
Increased compliance with and support for guidelines and regulations for safe and sustainable boating (7B)	LI 12: Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	<p>Activities include those relating to safe and responsible boating</p> <p>Specific rules, regulations and guidelines include:</p> <ul style="list-style-type: none"> <li>- Boating safety guidelines</li> <li>- Boating rules</li> <li>- Licence / registration conditions</li> <li>- Safety equipment</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- General boaters</li> </ul>	Boating Safety Compliance Rate	Initiative 7 Lead (TfNSW)	TfNSW Boating Safety Officer reports	Ongoing and collated annually	

Table 31 Indicators and associated details for long-term outcomes for Initiative 7

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate (7A)	KPI 9: Trend in ecological and social measures for boating	<p>Targeted trends include:</p> <ul style="list-style-type: none"> <li>- Reduction in serious injuries and fatalities</li> <li>- Reduced hazards to boating</li> <li>- Reduced environmental impact of boating</li> <li>- Increased satisfaction with boating services and experiences</li> </ul> <p>TfNSW collects and analyses information on boating incidents across NSW. The analysis looks at a range of attributes including incident location, type, contributing factors, outcome, frequency, vessel and operator details.</p> <p>TfNSW conducts a boating survey that looks at a number of criteria relating to boating activity including trip frequency, purpose of trips, types of vessels, exposure rates and a range of satisfactions measures.</p> <p>Environmental Services team collect data on marine estate rubbish and debris, corresponding to data associated with less navigational hazard (safety) and to environmental health (sustainability).</p>	Frequency of fatal and serious injury boating incidents	Initiative 7 Lead (TfNSW)	Boating Incidents in NSW, Centre for Maritime Safety	Annual	
			Proportion of survey respondents reporting experiencing boating hazards		Recreational Boating Participation survey		
			Number of marine pollution response incidents		Administrative data – Environmental Services Team		
			Proportion of survey respondents reporting satisfaction with boating experiences (see LI 23)		Recreational boating Participation Survey		

## Initiative 8 – Enhancing social, cultural and economic benefits

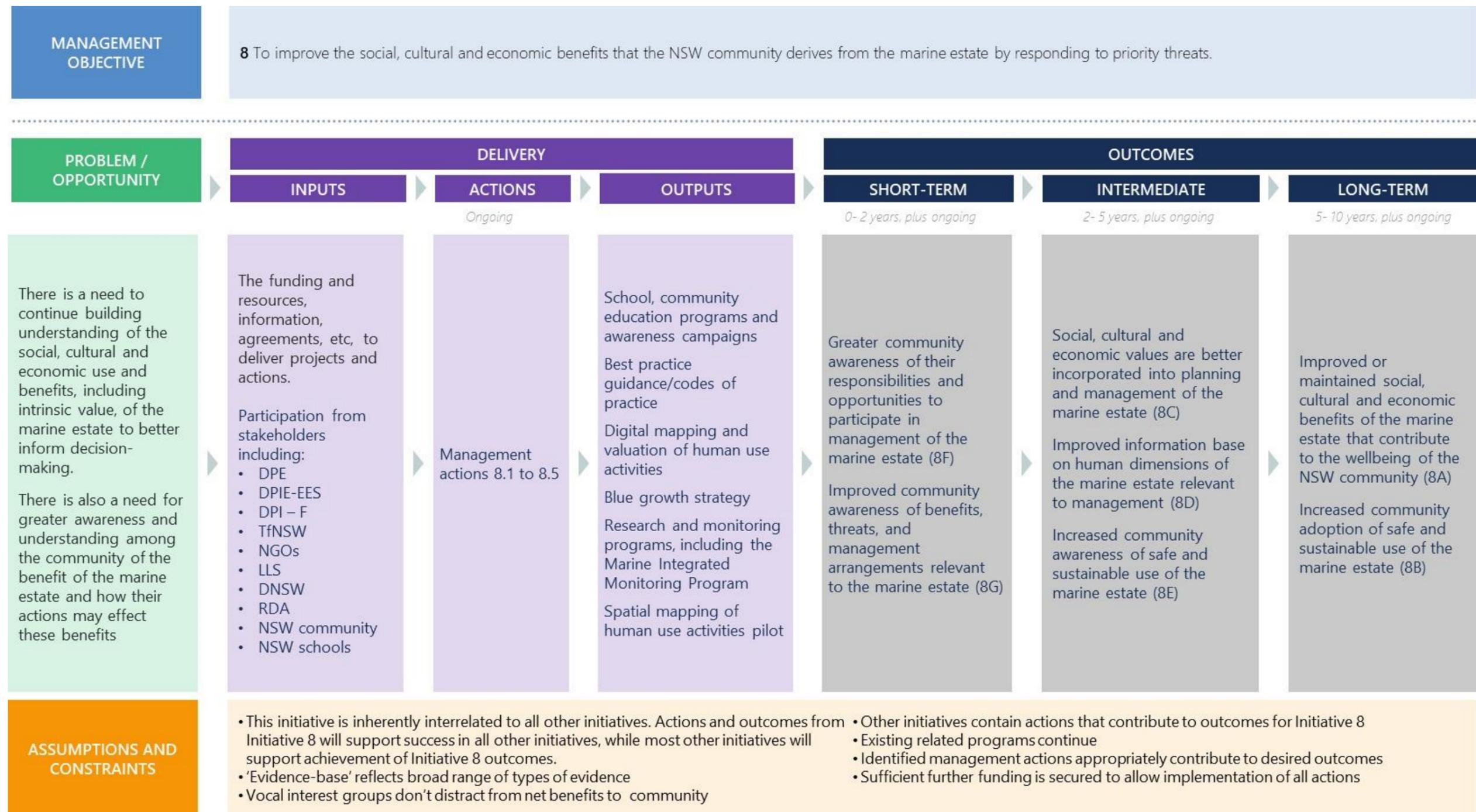


Figure 23 Program logic for Initiative 8

OUTCOME CODE	8G	8F	8E	8D	8C	8B	8A
<b>OUTCOME</b>	Improved community awareness of benefits, threats, and management arrangements relevant to the marine estate	Greater community awareness of their responsibilities and opportunities to participate in management of the marine estate	Increased community awareness of safe and sustainable use of the marine estate	Improved information base on human dimensions of the marine estate relevant to management	Social, cultural and economic values are better incorporated into planning and management of the marine estate	Increased community adoption of safe and sustainable use of the marine estate	Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community
<b>OUTCOME TIMEFRAME</b>	<i>Short-term</i>	<i>Short-term</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Long-term</i>	<i>Long-term</i>
<b>OUTCOME INDICATORS</b>	LI 10, LI 24	LI 21, LI 22	LI 21	LI 3	LI 7	KPI 15	KPI 3, KPI 11

MANAGEMENT ACTIONS							
8.1						KPI 15	KPI 3, KPI 11
8.1 (a)	LI 10, LI 24	LI 21, LI 22	LI 3, LI 10			KPI 15	KPI 3, KPI 11
8.1 (b)		LI 21, LI 22	LI 3, LI 10			KPI 15	KPI 3, KPI 11
8.1 (c)						KPI 15	KPI 3, KPI 11
8.2				LI 3, LI 10	LI 7	KPI 15	KPI 3, KPI 11
8.3						KPI 15	KPI 3, KPI 11
8.3 (a)	LI 10, LI 24			LI 3, LI 10	LI 7	KPI 15	KPI 3, KPI 11
8.3 (b)				LI 3, LI 10		KPI 15	KPI 3, KPI 11
8.4						KPI 15	KPI 3, KPI 11
8.4 (a)				LI 3, LI 10	LI 7	KPI 15	KPI 3, KPI 11
8.4 (b)				LI 3, LI 10		KPI 15	KPI 3, KPI 11
8.4 (c)				LI 3, LI 10	LI 7	KPI 15	KPI 3, KPI 11
8.4 (d)						KPI 15	KPI 3, KPI 11
8.5			LI 3, LI 10		LI 7	KPI 15	KPI 3, KPI 11

Figure 24 Action – outcome map for Initiative 8

Table 32 Indicators and associated details for short-term outcomes for Initiative 8

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved community awareness of benefits, threats, and management arrangements relevant to the marine estate (8G)	LI 10: Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	<p>Indicator to be explored through the following questions:</p> <p>How much, if anything, would you say you know about each of the following benefits associated with the NSW coast?</p> <ul style="list-style-type: none"> <li>- Many types of marine animals and plants in NSW are unique to the southern half of Australia;</li> <li>- Spending time in natural environments has been linked to better health and overall wellbeing in humans; Nature-based tourism is important for the economy of regional areas of NSW;</li> <li>- Estuaries in NSW (e.g. coastal lakes, harbours) are important nursery areas for many species;</li> <li>- Recreational fishing provides wellbeing benefits (e.g. relaxation, social connection and exercise);</li> <li>- Commercial fishing and aquaculture in NSW provide the community with a source of seafood that is sustainably managed.;</li> <li>- For Aboriginal people, culture, nature, land and water are connected to each other;</li> <li>- Aboriginal cultural fishing is important for passing on cultural knowledge to younger generations</li> </ul> <p>And how much, if anything, would you say you know about each of the following threats associated with the NSW coast?</p> <ul style="list-style-type: none"> <li>- Most marine litter comes from land sources;</li> <li>- Marine litter can injure and kill wildlife through ingestion or entanglement;</li> <li>- Nutrients and sediments that are washed into drains and creeks can end up in waterways;</li> <li>- Stormwater and farmland runoff can affect the health and habitats of marine wildlife (e.g. seagrass);</li> <li>- Human activities cause estuaries (e.g. coastal lakes, harbours) to be the most impacted environments on the NSW coast;</li> <li>- Climate change is rated as a major threat to the benefits we receive from the NSW coast;</li> <li>- Human presence can impact wildlife (e.g. shore birds, whales) by causing them to move away from feeding, resting and breeding areas;</li> <li>- Harvesting or removing wildlife (e.g. fish, sea snails) can impact the way other people use and value the coast</li> </ul> <p>Levels of awareness: Yes, fully aware of it, Yes, aware of it but not in detail, No, not aware of it</p>	Proportion of survey respondents reporting awareness	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey, Visitors Survey, Youth Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved community awareness of benefits, threats, and management arrangements relevant to the marine estate (8G)	LI 24: Community members report awareness and clarity of agencies' respective roles and responsibilities in managing the marine estate	<p>Indicator to be explored through the following questions:</p> <p>Which, if any, of the following NSW government agencies or authorities that manage the NSW coast are you aware of? Please select all that apply.</p> <ul style="list-style-type: none"> <li>- DPI Fisheries</li> <li>- Crown Lands</li> <li>- Local Land Services</li> <li>- DPE-EHG</li> <li>- DPE-P</li> <li>- TfNSW</li> <li>- None of the above</li> <li>- Don't know / Not sure</li> </ul> <p>To the best of your knowledge, what do you think [SHOW IF SELECTED MORE THAN ONE AGENCY: these agencies are] [SHOW IF SELECTED ONE AGENCY: this agency is] responsible for managing?</p> <ul style="list-style-type: none"> <li>- Fisheries and aquaculture</li> <li>- Water quality and litter</li> <li>- Marine mammals, birds &amp; reptiles</li> <li>- Land-use planning, major developments &amp; infrastructure</li> <li>- Boating, maritime safety and ports, including infrastructure</li> <li>- Marine park and aquatic reserve management</li> <li>- Land management and native title support</li> <li>- Deliver services to farmers to support sustainable land management</li> </ul>	Proportion of survey respondents reporting awareness and clarity (%)	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.
Greater community awareness of their responsibilities and opportunities to participate in management of the marine estate (8F)	LI 21: Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	<p>Indicator to be explored through the following question:</p> <p>How well do you feel you understand the following rules and regulations related to the NSW coast?</p> <ul style="list-style-type: none"> <li>- Disposal of different types of rubbish;</li> <li>- Stormwater best management;</li> <li>- Approaching marine wildlife (e.g. seals, dolphins, and whales) on foot, boat, or in the water);</li> <li>- Recreational fishing;</li> <li>- Recreational boating including use of paddle crafts (e.g. motor cruising, sailing, PWC, kayaking)</li> </ul> <p>Levels of awareness/clarity: Very well, Fairly well, Not very well, Have heard of, but know nothing about them, Never heard about them</p>	Proportion of survey respondents reporting awareness and clarity (%)	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		Targeted groups include: Community					
Greater community awareness of their responsibilities and opportunities to participate in management of the marine estate (8F)	LI 22: Community and stakeholder participation in decision-making and management of the marine estate	Includes decision-making and management activities relating to: <ul style="list-style-type: none"> <li>- Number of people that responded to surveys (Coastal residents and visitors, youth, Aboriginal peoples)</li> <li>- Number of surveys conducted</li> <li>- Number of people engaged in community surveys</li> </ul> Targeted groups include: Community, coastal Aboriginal communities	Number of community members responding to survey  Number of surveys conducted	DPI-F (Initiative 8 lead)	Administrative data	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Information relating to Indicator and Measure is documented through administrative processes

Table 33 Indicators and associated details for intermediate outcomes for Initiative 8

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Increased community awareness of safe and sustainable use of the marine estate (8E)	LI 21: Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Indicator to be explored through the following question:  How well do you feel you understand the following rules and regulations related to the NSW coast?  <ul style="list-style-type: none"> <li>- Disposal of different types of rubbish;</li> <li>- Stormwater best management;</li> <li>- Approaching marine wildlife (e.g. seals, dolphins, and whales) on foot, boat, or in the water);</li> <li>- Recreational fishing;</li> <li>- Recreational boating including use of paddle crafts (e.g. motor cruising, sailing, PWC, kayaking)</li> </ul> Levels of awareness/clarity: Very well, Fairly well, Not very well, Have heard of, but know nothing about them, Never heard about them	Proportion of survey respondents reporting awareness and clarity (%)	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.
Improved information base on human dimensions of the marine estate relevant to management (8D)	LI 3: Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value	Current identified knowledge gaps include inadequate social, cultural and economic data	Number of knowledge gaps with status changing from 'inferred' to 'adequate'.  Number of research/information reports provided.	DPI-F (Initiative 8 lead) with input from MIMP TWG	Program administrative data Review against TARA	Five-yearly, in association with the TARA review	Knowledge gaps are reviewed through review of the TARA

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
	and management approaches		Number of threats and risks in the TARA where confidence in the assessment rating improves based on new knowledge generated through Initiative 8				
Social, cultural and economic values are better incorporated into planning and management of the marine estate (8C)	LI 7: Agency staff report using information relating to social, cultural, economic and environmental values in their strategies, plans, programs and decision-making processes	Indicator to be explored through the following question: TBC	Proportion of agency staff reporting use of information relating to social, cultural, economic and environmental values	Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Table 34 Indicators and associated details for long-term outcomes for Initiative 8

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Increased community adoption of safe and sustainable use of the marine estate (8B)	KPI 15: Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders	<p>Indicator to be explored through the following question:</p> <p>And how often, if at all, have you done the following in the past 12 months?</p> <ul style="list-style-type: none"> <li>- Disposal of rubbish appropriately;</li> <li>- Taken care to minimise use of fertiliser and garden chemicals;</li> <li>- Followed rules and guidelines to minimise disturbance to coastal and marine wildlife;</li> <li>- followed rules for recreational fishing and recreational boating;</li> <li>- Been mindful not to impact the enjoyment of others when using the NSW coast</li> </ul> <p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- water pollution and litter</li> <li>- recreational fishing</li> <li>- Recreational boating</li> </ul> <p>Frequency: Always, Often, Sometimes, Rarely, Never</p>	Proportion of survey respondents reporting use of best practice approaches and processes (%)	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey, Visitors Survey, Youth Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of behaviour, social acceptability bias is not driving response by survey participants.
Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)	KPI 3: Community wellbeing indicator	<p>Indicator to be explored through the following key questions:</p> <p>How important is the NSW coast/Sea Country in contributing to your quality of life?</p> <p>How important is the NSW coast/Sea Country in contributing to your (Physical health, Emotional and mental health, spending time/socialising with family/friends/community, Nutritional needs, Spirituality, Cultural identity, Cost of living)?</p> <p>Which, if any, of the following activities have you done in the past 12 months in your local coastal area?</p> <p>Which, if any, of the following activities cultural activities have you done on Sea Country in the past 12 months?</p> <p>How much of an impact do you think the following aspects currently have on your experience of your local coastal areas?</p> <p>How much of an impact do you think the following aspects currently have on your cultural connections to Sea Country in your local area?</p> <p>When answering, please think about whether you have personally been impacted over the past 12 months</p> <p>Targeted groups include: coastal residents, visitors to coastal NSW, coastal Aboriginal communities</p>	<p>Average level of importance of the marine estate in contributing to quality of life (0-10)</p> <p>Average level of importance of the marine estate in contributing to selected aspects of wellbeing (0-10)</p> <p>Importance scale (0-10): 0 = 'not important at all'; 10 = 'very important'.</p> <p>Proportion of population participating in marine estate-related activities</p> <p>Proportion of Aboriginal people participating in cultural activities related to Sea Country</p> <p>Average level of impact of priority threats on marine estate experiences</p> <p>Average level of impact of priority threats on cultural</p>	DPI-F (Initiative 8 lead)	Coastal Residents Survey, Visitors Survey, Youth Survey  Sea Country (marine estate) survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
			connections to Sea Country Impact scale (0-10): 0 = No impact, 'You never noticed it'; '10 = Severe impact, 'It always affects your experience to the point that you had to stop doing the activity'.				
Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)	KPI 11: Economics benefits indicator	<p>KPI 11 monitors the broad (overall) status of economic benefits derived from the marine estate. KPI 11 is a suite of performance indicators (dashboard indicators) developed to monitor a sub-set of economic benefits as part of the Marine Integrated Monitoring Program (MIMP) community well-being indicators.</p> <p>The Economic Benefits WG selected six indicators, which are listed here. Data for these are currently available.</p> <p>In addition, the WG agreed on several potential additional analysis/methods to undertake further analysis of these indicators, assess the economic health of the Marine Estate, and to produce annual report cards. Regional case studies would use economic analysis techniques such as calculation of producer/ consumer surplus, willingness to pay survey, travel cost method. Details for this indicator are currently in development.</p>	<p>Nature based visitors expenditure (\$ value):</p> <ul style="list-style-type: none"> <li>- International overnight travel (\$ billion)</li> <li>- Domestic overnight travel (\$ billion)</li> <li>- Domestic daytrip travel (\$ billion)</li> </ul>	DPI-F (Economic TWG lead)	<a href="https://www.destinationnsw.com.au/tourism/facts-and-figures/market-segments">https://www.destinationnsw.com.au/tourism/facts-and-figures/market-segments</a>	Annual	Data from external source continues to be collected
			<p>Commercial fishery GVP (\$ value):</p> <ul style="list-style-type: none"> <li>- Commercial (wild catch)</li> <li>- Aquaculture</li> </ul>		<a href="https://www.awe.gov.au/abares/research-topics/fisheries">https://www.awe.gov.au/abares/research-topics/fisheries</a>		
			<p>Willingness-to-pay of visiting beaches (\$ value)</p>		<a href="https://www.awe.gov.au/abares/research-topics/fisheries">https://www.awe.gov.au/abares/research-topics/fisheries</a>		
			<p>Number of recreational fishing licences</p>		<a href="https://www.dpi.nsw.gov.au/about-us/publications/pdi/2018/recreational-fishing">https://www.dpi.nsw.gov.au/about-us/publications/pdi/2018/recreational-fishing</a>		
			<p># Registered recreational vessels (not including personal watercraft registrations)</p>		<a href="https://roads-waterways.transport.nsw.gov.au/about/corporate-publications/annual-reports.html">https://roads-waterways.transport.nsw.gov.au/about/corporate-publications/annual-reports.html</a>		
			<p>Tourism industry employment (#)</p> <ul style="list-style-type: none"> <li>- Sydney</li> <li>- Central Coast</li> <li>- Hunter</li> <li>- North Coast</li> <li>- South Coast</li> </ul>		<a href="https://www.tra.gov.au/data-and-research/reports/regional-tourism-satellite-account-2019-20/regional-tourism-satellite-account-2019-20">https://www.tra.gov.au/data-and-research/reports/regional-tourism-satellite-account-2019-20/regional-tourism-satellite-account-2019-20</a>		

## Initiative 9 – Delivering effective governance

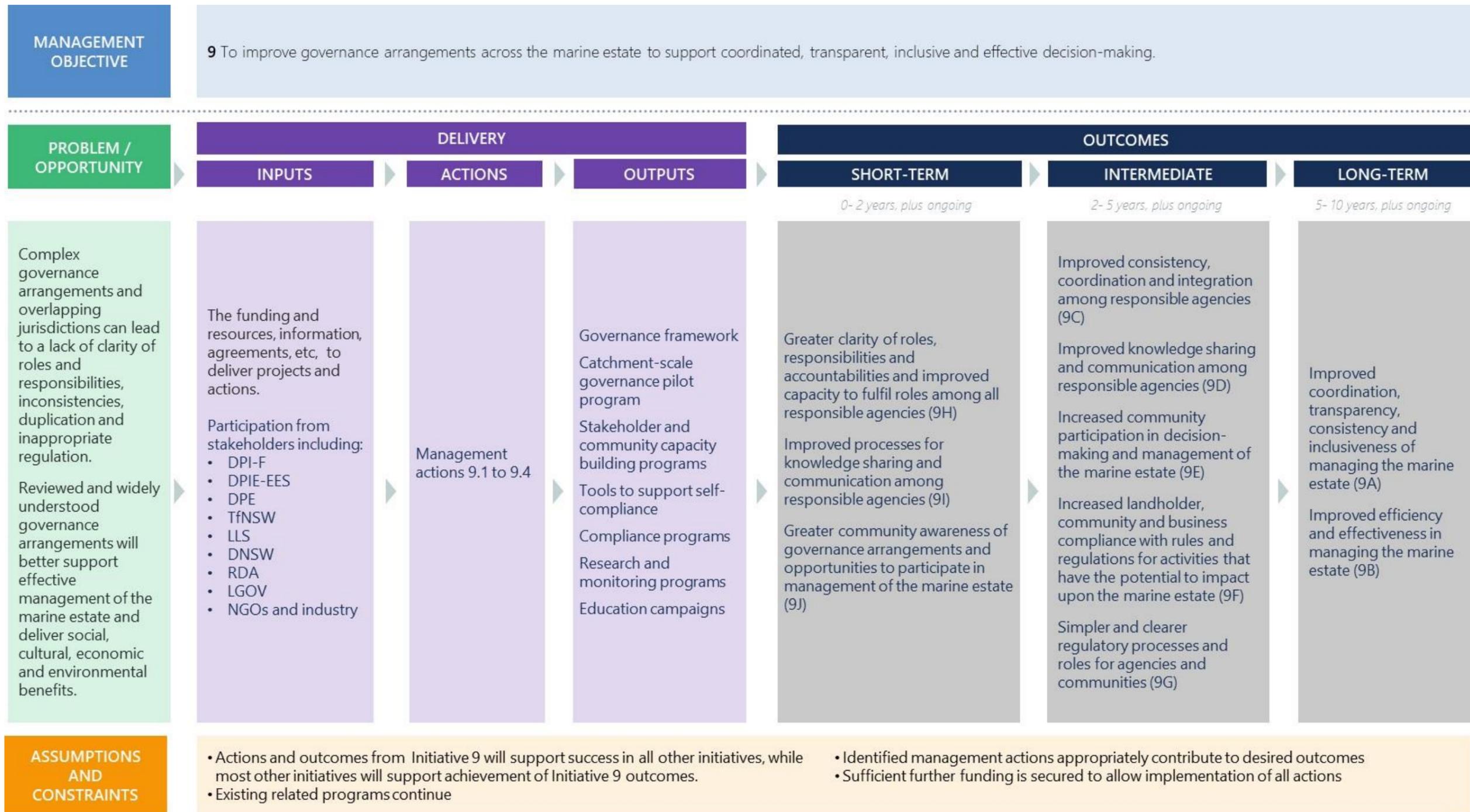


Figure 25 Program logic for Initiative 9

OUTCOME CODE	9J	9I	9H	9G	9F	9E	9D	9C	9B	9A
<b>OUTCOME</b>	Greater community awareness of governance arrangements and opportunities to participate in management of the marine estate	Improved processes for knowledge sharing and communication among responsible agencies	Greater clarity of roles, responsibilities and accountabilities and improved capacity to fulfil roles among all responsible agencies	Simpler and clearer regulatory processes and roles for agencies and communities	Increased landholder, community and business compliance with rules and regulations for activities that have the potential to impact upon the marine estate	Increased community participation in decision-making and management of the marine estate	Improved knowledge sharing and communication among responsible agencies	Improved consistency, coordination and integration among responsible agencies	Improved efficiency and effectiveness in managing the marine estate	Improved coordination, transparency, consistency and inclusiveness of managing the marine estate
<b>OUTCOME TIMEFRAME</b>	<i>Short-term</i>	<i>Short-term</i>	<i>Short-term</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Intermediate</i>	<i>Long-term</i>	<i>Long-term</i>
<b>OUTCOME INDICATORS</b>	LI 24	LI 8	LI 5, LI 11	LI 6	LI 12	LI 22, LI 26	LI 8	LI 6	KPI 12, KPI 16	KPI 12

MANAGEMENT ACTIONS										
9.1									KPI 12, KPI 16	KPI 12
9.1 (a)	LI 24		LI 5, LI 11	LI 6				LI 6	KPI 12, KPI 16	KPI 12
9.1 (b)	LI 24		LI 5, LI 11					LI 6	KPI 12, KPI 16	KPI 12
9.1 (c)								LI 6	KPI 12, KPI 16	KPI 12
9.1 (d)	LI 24	LI 8					LI 8	LI 6	KPI 12, KPI 16	KPI 12
9.2	LI 24				LI 12	LI 22, LI 26			KPI 12, KPI 16	KPI 12
9.3									KPI 12, KPI 16	KPI 12
9.3 (a)				LI 6				LI 6	KPI 12, KPI 16	KPI 12
9.3 (b)				LI 6					KPI 12, KPI 16	KPI 12
9.3 (c)	LI 24				LI 12	LI 22, LI 26			KPI 12, KPI 16	KPI 12
9.4									KPI 12, KPI 16	KPI 12
9.4 (a)					LI 12	LI 22, LI 26			KPI 12, KPI 16	KPI 12
9.4 (b)		LI 8					LI 8	LI 6	KPI 12, KPI 16	KPI 12

Figure 26 Action – outcome map for Initiative 9

Table 35 Indicators and associated details for short-term outcomes for Initiative 9

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Greater community awareness of governance arrangements and opportunities to participate in management of the marine estate (9J)	LI 24: Community members report awareness and clarity of agencies' respective roles and responsibilities in managing the marine estate		Proportion of survey respondents reporting awareness and clarity	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey .	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	
Improved processes for knowledge sharing and communication among responsible agencies (9I)	LI 8: New or improved processes or events for sharing knowledge among responsible agencies, and between responsible agencies and targeted stakeholders and the community	<p>Includes knowledge sharing in relation to:</p> <ul style="list-style-type: none"> <li>- All new and improved processes across the program, as all are relevant to i9.</li> </ul> <p>Interagency knowledge sharing and communication processes include:</p> <ul style="list-style-type: none"> <li>- MEMA meetings</li> <li>- MASC meetings</li> <li>- Initiative Working Group meetings</li> <li>- Quarterly 'snapshot' report</li> <li>- MEMA confidential quarterly report</li> <li>- Marine Estate website, including Initiative profile pages</li> <li>- Presentations</li> <li>- Conferences (e.g., NSW Coastal Conference 2019)</li> <li>- Marine Estate newsletters</li> <li>- Program Plan</li> <li>- Implementation Plan</li> <li>- Health Check and Stage 2 Requirements</li> </ul>	Number of new or improved processes, networks, data sharing platforms or events.	DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	Administrative data i.e., Annual report figures which can be measured regularly and relate to the new or improved processes.	Collated biennially (ideally), or minimum of three (3) over the life of the MEMS.	
			Proportion of respondents satisfied with improvements to processes (through agency staff survey)		Agency staff survey (to include a question on whether the staff processes have been improved, and whether knowledge sharing has improved)	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Greater clarity of roles, responsibilities and accountabilities and improved capacity to fulfil roles among all	LI 5: Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- General management of the marine estate</li> </ul> <p>Agencies include responsible agencies only</p>	Proportion of survey respondents demonstrating clarity	DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
responsible agencies (9H)			Number of activities/processes that demonstrate greater clarity of roles, responsibilities and accountability and improved capacity or demonstrations of governance.		Administrative data - findings from quarterly reporting, reviews, process evaluation results, external assessments such as REAF report.	Collated biennially (ideally), or minimum of three (3) over the life of the MEMS.	
Greater clarity of roles, responsibilities and accountabilities and improved capacity to fulfil roles among all responsible agencies (9H)	LI 11: Responsible agencies report confidence with capacity to fulfil governance roles and responsibilities	Regulatory processes and approvals such as: <ul style="list-style-type: none"> <li>- land use and development planning and approvals in coastal and foreshore zones</li> <li>- Crown land consent for work on crown land</li> <li>- Marine Park permits</li> <li>- DPI s.37 permits</li> <li>- Commercial fishing approvals</li> <li>- Aquaculture</li> </ul>	Proportion of survey respondents demonstrating confidence	DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	Responsible agencies staff survey	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
			Number of activities/processes that demonstrate capacity to fulfil governance roles and responsibilities		Administrative data - findings from quarterly reporting, external assessments such as REAF report.	Collated biennially (ideally), or minimum of three (3) over the life of the MEMS.	

Table 36 Indicators and associated details for intermediate outcomes for Initiative 9

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Simpler and clearer regulatory processes and roles for agencies and communities (9G)	LI 6: Responsible agencies report improved simplicity, clarity and efficiency for regulatory processes and approvals	Regulatory processes and approvals such as: <ul style="list-style-type: none"> <li>- land use and development planning and approvals in coastal and foreshore zones</li> <li>- Crown land consent for work on crown land</li> <li>- Marine park permits</li> <li>- DPI s.37 permits</li> <li>- Commercial fishing approvals</li> <li>- Aquaculture</li> <li>- Rec fishing</li> <li>- DPE-EHG to confirm</li> <li>- TfNSW to confirm</li> </ul> Responsible agencies include: <ul style="list-style-type: none"> <li>- All MEMA agencies and Departments within their cluster</li> </ul>	Proportion of responsible agency staff who report experiencing improved simplicity, clarity and efficiency to manage regulatory processes and approvals	DPI-F (Initiative 9 lead) in conjunction with Agency Staff Survey Coordinator	Agency Staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		Community members includes those who seek approvals or other information in relation to regulatory processes					
Increased landholder, community and business compliance with rules and regulations for activities that have the potential to impact upon the marine estate (9F)	LI 12: Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Land use and management</li> <li>- Water pollution and litter</li> <li>- Marine pests</li> <li>- Recreational and commercial fishing</li> <li>- Safe and sustainable boating</li> <li>- Threatened and protected species</li> </ul> <p>Specific rules, regulations and guidelines include:</p> <ul style="list-style-type: none"> <li>- Fisheries Management Act</li> <li>- MEM Act</li> <li>- POEO Act</li> <li>- TfNSW</li> <li>- DPE-EHG</li> <li>- DPE-P</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- TBC by initiative lead(s)</li> </ul>	Proportion of noncompliant stakeholders per capita	<p>DPE-EHG (water pollution);</p> <p>EPA (litter);</p> <p>DPI Fisheries (permits);</p> <p>DPI (land use &amp; management);</p> <p>DPE-EHG (threatened and protected species);</p> <p>DPI (fishing);</p> <p>TfNSW (boating);</p> <p>DPI (land use &amp; management);</p> <p>DPI (marine pests, fishing, aquaculture);</p> <p>DPI (Landholders &amp; business)</p>	<p>Administrative data;</p> <p>Litter fine data – EPA;</p> <p>Fisheries compliance records of infringements;</p> <p>Initiative lead(s) to note if they have any other existing processes for monitoring noncompliance:</p> <ul style="list-style-type: none"> <li>- i9 to liaise with compliance team to assess complexities of non-compliance data and provide appropriate commentary.</li> </ul>	Biennial	
Increased community participation in decision-making and management of the marine estate (9E)	LI 22: Community and stakeholder participation in decision-making and management of the marine estate	<p>Includes decision-making and management activities relating to:</p> <ul style="list-style-type: none"> <li>- MEMS stages / projects</li> <li>- Marine parks</li> </ul> <p>Stakeholders include:</p> <ul style="list-style-type: none"> <li>- Community</li> <li>- Participants in the advisory committees.</li> </ul>	<p>Number of community and stakeholder participants in decision-making processes</p> <p>Number of participants in and frequency of engagement through marine park advisory committees</p>	DPI-F (Initiative 9 lead)	<p>Administrative data</p> <p>Community surveys (marine park management plans)</p> <p>Advisory committees administrative data</p>	Annual	
Increased community participation in decision-making and management of the marine estate (9E)	LI 26: Community and stakeholder satisfaction with experience participating in decision-making and management of the marine estate	<p>Includes decision-making and management activities relating to:</p> <ul style="list-style-type: none"> <li>- MEMS stages / projects</li> <li>- Marine parks</li> </ul> <p>Stakeholders include:</p>	Average satisfaction rating based on Likert scale	DPI-F (Initiative 9 lead)	Post event/activity participant survey, documented in administrative data.	<p>Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Surveys post</p>	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
		<ul style="list-style-type: none"> <li>- Community</li> <li>- Participants in the advisory committees.</li> </ul>			Advisory committee survey – organised by action lead	event/activity – frequency varies (minimum three over the life of the MEMS)  Data collated annually	
Improved knowledge sharing and communication among responsible agencies (9D)	LI 8: New or improved processes or events for sharing knowledge among responsible agencies, and between responsible agencies and targeted stakeholders and the community	Includes knowledge sharing in relation to: <ul style="list-style-type: none"> <li>- all new and improved processes across the program, as all are relevant to i9.</li> </ul> Interagency knowledge sharing and communication processes include: <ul style="list-style-type: none"> <li>- MEMA meetings</li> <li>- MASC meetings</li> <li>- Initiative Working Group meetings</li> <li>- Quarterly 'snapshot' report</li> <li>- MEMA confidential quarterly report</li> <li>- Marine Estate website, including Initiative profile pages</li> <li>- Presentations</li> <li>- Conferences (e.g., NSW Coastal Conference 2019)</li> <li>- Marine Estate newsletters</li> <li>- Program Plan</li> <li>- Implementation Plan</li> <li>- Health Check and Stage 2 Requirements</li> </ul>	Number of new or improved processes, networks, data sharing platforms or events	DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	Administrative data i.e., Annual report figures which can be measured regularly and relate to the new or improved processes.	Collated biennially (ideally), or minimum of three (3) over the life of the MEMS.	
			Proportion of respondents satisfied with improvements to processes (through agency staff survey)		Agency staff survey (to include a question on whether the staff processes have been improved, and whether knowledge sharing has improved)	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
Improved consistency, coordination and integration among responsible agencies (9C)	LI 6: Responsible agencies report improved simplicity, clarity and efficiency for regulatory processes and approvals	Regulatory processes and approvals such as: <ul style="list-style-type: none"> <li>- land use and development planning and approvals in coastal and foreshore zones</li> <li>- Crown land consent for work on crown land</li> <li>- Marine Park permits</li> <li>- DPI s.37 permits</li> <li>- Commercial fishing approvals</li> <li>- Aquaculture</li> <li>- Rec fishing</li> <li>- DPE-EHG to confirm</li> <li>- TfNSW to confirm</li> </ul> Responsible agencies include: <ul style="list-style-type: none"> <li>- All MEMA agencies and Departments within their cluster</li> </ul>	Proportion of responsible agency staff who report experiencing improved simplicity, clarity and efficiency to manage regulatory processes and approvals	DPI-F (Initiative 9 lead) in conjunction with Agency Staff Survey Coordinator	Agency Staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	

Table 37 Indicators and associated details for long-term outcomes for Initiative 9

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Improved efficiency and effectiveness in managing the marine estate (9B)	KPI 12: Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate	<p>Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals within identified stakeholder categories. Unless otherwise specified, all categories will be surveyed. Stakeholder categories are:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities.</li> <li>- Targeted stakeholders (engaged community), including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.</li> <li>- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future</li> </ul>	Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance	<p>DPI-F (Initiative 8 lead) - Community</p> <p>Agency Staff Survey Coordinator</p> <p>Stakeholder survey coordinator</p>	<p>Coastal Residents Survey</p> <p>Sea Country (marine estate) survey</p> <p>Agency staff survey</p> <p>Targeted stakeholder survey</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
Improved efficiency and effectiveness in managing the marine estate (9B)	KPI 16: Responsible and related agencies report satisfaction with efficiency and effectiveness governance of the marine estate	<p>Stakeholder satisfaction will be assessed through the following measures (assessed separately for consistency within own organisation and across responsible agencies):</p> <ul style="list-style-type: none"> <li>- Allocation of resources, including staff and funding, across management of the marine estate is clearly directed towards identified outcomes</li> <li>- Systems, processes, skills, knowledge and governance and administrative arrangements allow organisations and individuals to efficiently and effectively deliver their responsibilities, with minimal duplication, unreasonable delays or unnecessary activities</li> <li>- Responsible agencies are achieving, or on track to achieve, identified outcomes within budget</li> </ul> <p>Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities; local government; and, researchers.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals from responsible and related agencies, including marine estate managers from relevant government departments, agencies, statutory authorities and local government</p>	Average satisfaction rating based on Likert scale for each measure	Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

Outcome	Indicator	Specifications	Measure(s) and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)	KPI 12: Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate	<p>Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals within identified stakeholder categories. Unless otherwise specified, all categories will be surveyed. Stakeholder categories are:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities.</li> <li>- Targeted stakeholders and partners, including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.</li> <li>- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future</li> </ul>	Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance	<p>DPI-F (Initiative 8 lead) - Community</p> <p>Agency Staff Survey Coordinator</p> <p>Stakeholder survey coordinator</p>	<p>Coastal Residents Survey</p> <p>Sea Country (marine estate) survey</p> <p>Agency staff survey</p> <p>Targeted stakeholder survey</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	

## All indicators

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 1	Waterway health supports community values and uses	Waterway health in the marine estate aligns with community values (1A)	<p>To be assessed through: Protection of Aquatic Ecosystems (PAE), Primary Contact Recreation (swimming, PCR) Edible Seafood (ES). Ecological health grade (to be developed)</p> <p>PAE: will use the current estuary health grade scores (<a href="https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm">https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm</a>) and will work on development of additional measures for pH impact to integrate into the same calculation framework. Data collection will focus on the existing Statewide MEMA Cumulative Impact Monitoring being done by DPE-EHG, with additional sites included as necessary. PCR: will use Beachwatch Grades from existing Beachwatch program. ES: will use Safe Foods Australia grades for oyster producing estuaries plus results from National Food Standards seafood surveys and any other surveys (pipis, other contaminants) that are done in the time-period. Supplemented by some additional monitoring as part of Management Action 1.5.</p>	<p>PAE: Estuary Health Grade (A, B, C, D, E)</p> <p>PCR: Beachwatch Grades (A, B, C, D, E)</p> <p>Edible Seafood grades (placeholder – grade approach to be developed)</p> <p>Ecological health grades (placeholder – TBD)</p>	<p>DPE-EHG</p> <p>DPE-EHG</p> <p>DPI, FoodSafe NSW</p> <p>DPE-EHG</p>	<p>Current estuary health grade scores (<a href="https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm">https://www.environment.nsw.gov.au/soc/assess-estuary-ecosystem-health-160250.htm</a>)</p> <p>Existing Beachwatch program (where available)</p> <p>TBC</p> <p>TBC</p>	<p>Annual (only where available, noting that individual sites are assessed on three-year cycles, therefore regional results reflect only those sites assessed in the previous 12 months)</p> <p>Annual (only where available)</p> <p>TBC</p> <p>TBC</p>	
KPI 2	Reduction in litter in the marine and estuarine environments in targeted regions.	Reduction in input litter to the marine estate in alignment with community values (1B)	<p>National Litter Index (NLI) applies until end 2020. Key Litter Item Study (KLIS) applies from 2021 onwards.</p> <p>Currently no target sites. The Marine Debris TARA guide selection of target site in future.</p>	<p>Litter items per 1000 square metres (NLI NSW)</p> <p>Debris items per 1000 square metres (KLIS NSW) (urban estuarine environments)</p>	<p>DPE-EHG Initiative 1A lead sourced from NSW EPA</p> <p>DPE-EHG Initiative 1A lead sourced from NSW EPA</p>	<p>National Litter Index Keep Australia Beautiful (up to 2020)</p> <p>Key Litter Item Study (started 2017) – to measure marine litter</p>	Annual	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 2	Reduction in litter in the marine and estuarine environments in targeted regions.	Reduction in input litter in target regions (1I)	National Litter Index (NLI) applies until end 2020. Key Litter Item Study (KLIS) applies from 2021 onwards.  Currently no target sites. The Marine Debris TARA guide selection of target site in future.	Litter items per 1000 square metres (NLI NSW)  Debris items per 1000 square metres (KLIS NSW) (urban estuarine environments)	DPE-EHG Initiative 1A lead sourced from NSW EPA	National Litter Index Keep Australia Beautiful (up to 2020)  Key Litter Item Study (started 2017) – to measure marine litter	Annual	
KPI 3	Community wellbeing indicator	Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)	Indicator to be explored through the following key questions:  How important is the NSW coast/Sea Country in contributing to your quality of life? How important is the NSW coast/Sea Country in contributing to your (Physical health, Emotional and mental health, spending time/socialising with family/friends/community, Nutritional needs, Spirituality, Cultural identity, Cost of living)?  Which, if any, of the following activities have you done in the past 12 months in your local coastal area? Which, if any, of the following activities cultural activities have you done on Sea Country in the past 12 months?  How much of an impact do you think the following aspects currently have on your experience of your local coastal areas? How much of an impact do you think the following aspects currently have on your cultural connections to Sea Country in your local area? When answering, please think about whether you have personally been impacted over the past 12 months  Targeted groups include: coastal residents, visitors to coastal NSW, coastal Aboriginal communities	Average level of importance of the marine estate in contributing to quality of life (0-10) Average level of importance of the marine estate in contributing to selected aspects of wellbeing (0-10) Importance scale (0-10): 0 = 'not important at all'; 10 = 'very important'.  Proportion of population participating in marine estate-related activities Proportion of Aboriginal people participating in cultural activities related to Sea Country  Average level of impact of priority threats on marine estate experiences Average level of impact of priority threats on cultural connections to Sea Country Impact scale (0-10): 0 = No impact, 'You never noticed it'; '10 = Severe impact, 'It always affects your experience to the point that you had to stop doing the activity'.	DPI-F (Initiative 8 lead)	Coastal Residents Survey, Visitors Survey, Youth Survey  Sea Country (marine estate) survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 4	Biodiversity and habitat indicator	(2B) Maintained or improved biodiversity and marine habitats (1C)	Includes measures of: - Estuarine macrophyte extent, fragmentation - Coastal algal abundance and condition - Coastal invertebrate abundance and size - Coastal fish diversity, abundance, and size - Estuarine fish diversity, abundance, and size	Changes in areal extent of macrophytes, species composition, degree of fragmentation, remote sensing of mangrove canopy condition (local scale)  Percent cover of kelp, foliose algae, benthic invertebrates. Relative urchin abundance. Condition, biomass and recruitment of kelp  Fish size, abundance & diversity  Fish, invertebrates and macroalgal diversity, abundance, size and covers  Fish assemblages	Environmental MIMP Technical Working Group	Various – monitoring by DPE and DPI. Documented in the Environmental Condition Framework	Measure-specific collection frequencies. Document in the Environmental Condition Framework	Monitoring is statewide
KPI 5	NSW contribution to national body of knowledge, approaches and plans for conservation of targeted threatened and protected species	Increased NSW contribution to national conservation of targeted threatened and protected species (5B)	Includes coastal and marine species listed as threatened and protected under the Biodiversity Conservation Act 2016 and threatened under the Fisheries Management Act 1994.	Number of methods or processes that were led or influenced by NSW that can be applied interstate or nationally.  Proportion of national species plans developed in which NSW is a signatory or partner  Number of programs, guidelines or codes of practice for threatened and protected species developed by NSW that are adopted by other jurisdictions.  Number of occasions where other jurisdictions seek advice from NSW on matters relating to threatened and protected species.  Number of publications relating to threatened and protected species where NSW is a lead contributor.	DPE-EHG (Initiative 5 lead) in collaboration with DPI-F	Administrative data	Ongoing, collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 6	Aboriginal people report satisfaction with Sea Country management	Improved Aboriginal satisfaction with Sea Country management (4A)	<p>KPI to focus on satisfaction with processes.</p> <p>Measurement of this KPI will focus on those involved in programs, initiatives or activities that result from the framework for effective and appropriate Aboriginal involvement in Sea Country management and decision-making, and the integrated Aboriginal engagement model for participation in Sea Country management, planning and monitoring, both to be developed through Initiative 4. Measures may also be informed by the Aboriginal engagement model, once completed.</p>	Average satisfaction rating based on Likert scale	DPI-F (Initiative 4 lead)	Post-training survey or other follow-up discussions (formal or informal)		

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 7	Aboriginal employment and opportunities in relation to the marine estate	Aboriginal people derive greater economic benefit from the marine estate (4C)	<p>Responsible agencies: the four MEMA agencies Related agencies include other delivery partners, such as LLS, DPE Water, Crown Lands, EPA, NRAR, Heritage NSW, LGAs (do employ and award contracts to aboriginal organisations).</p> <p>Employment opportunities include: - Fox Control Program - Bush regeneration works - Pest and weed works - Other on-ground activities - Professional services</p> <p>Capacity building courses and training opportunities include: - Deckhand and Coxswain courses - Education programs</p>	<p>Number and total value of contracts awarded to Aboriginal-owned entities by responsible and related agencies for services in relation to marine estate management</p> <p>Number of Aboriginal-owned entities that are registered suppliers with responsible and related agencies for provision of services in relation to marine estate management</p> <p>Number of Aboriginal-owned entities that have been contracted by responsible and related agencies to provide services in relation to marine estate management</p> <p>Proportion of addressable spend to Aboriginal businesses (target: &gt; 1 %) in relation to marine estate management</p> <p>Proportion of goods and services contracts to Aboriginal businesses (target: &gt; 3 %) in relation to marine estate management</p> <p>Number of Aboriginal people employed in roles at DPI-F in relation to management of the marine estate: - Permanent positions (FTE) - Short-term contracts (&lt; 12 months) - Longer contracts (12+ months)</p> <p>Number of participants in courses or training supported by Initiative 4 who have secured employment in related fields within 5 years of completing the course/training</p> <p>Number of Aboriginal-owned tourism businesses providing services in relation to the NSW marine estate</p> <p>Number of Aboriginal-owned businesses providing services to marine commercial industries, including aquaculture and commercial wild harvest.</p>	DPI-F (Initiative 4 lead)	<p>NSW public service procurement data</p> <p>NSW public service employment data</p> <p>Post-training survey or other follow-up discussions (formal or informal)</p> <p>Visit NSW (<a href="https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours">https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours</a>), or through direct contact with Visit NSW</p> <p>ABS data</p>	<p>Annual</p> <p>Irregularly and opportunistically (post-event), collated annually</p>	<p>Staff are willing to self-identify as being Aboriginal. Measure can be reported without breaching privacy.</p> <p>Initiative 4 staff are able to remain in contact with course/training participants.</p> <p>Relevant businesses list themselves through Visit NSW. Listed businesses provide a suitable sample to identify change over time.</p>

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 7	Aboriginal employment and opportunities in relation to the marine estate	Increased opportunities for Aboriginal people to derive economic benefit from the NSW marine estate (4F)	<p>Responsible agencies: the four MEMA agencies</p> <p>Related agencies include other delivery partners, such as LLS, DPE Water, Crown Lands, EPA, NRAR, Heritage NSW, LGAs (do employ and award contracts to aboriginal organisations).</p> <p>Employment opportunities include:</p> <ul style="list-style-type: none"> <li>- Fox Control Program</li> <li>- Bush regeneration works</li> <li>- Pest and weed works</li> <li>- Other on-ground activities</li> <li>- Professional services</li> </ul> <p>Capacity building courses and training opportunities include:</p> <ul style="list-style-type: none"> <li>- Deckhand and Coxswain courses</li> <li>- Education programs</li> </ul>	<p>Number and total value of contracts awarded to Aboriginal-owned entities by responsible and related agencies for services in relation to marine estate management</p> <p>Number of Aboriginal-owned entities that are registered suppliers with responsible and related agencies for provision of services in relation to marine estate management</p> <p>Number of Aboriginal-owned entities that have been contracted by responsible and related agencies to provide services in relation to marine estate management</p> <p>Proportion of addressable spend to Aboriginal businesses (target: &gt; 1 %) in relation to marine estate management</p> <p>Proportion of goods and services contracts to Aboriginal businesses (target: &gt; 3 %) in relation to marine estate management</p> <p>Number of Aboriginal people employed in roles at DPI-F in relation to management of the marine estate:</p> <ul style="list-style-type: none"> <li>- Permanent positions (FTE)</li> <li>- Short-term contracts (&lt; 12 months)</li> <li>- Longer contracts (12+ months)</li> </ul> <p>Number of participants in courses or training supported by Initiative 4 who have secured employment in related fields within 5 years of completing the course/training</p> <p>Number of Aboriginal-owned tourism businesses providing services in relation to the NSW marine estate</p> <p>Number of Aboriginal-owned businesses providing services to marine commercial industries, including aquaculture and commercial wild harvest.</p>	DPI-F (Initiative 4 lead)	<p>NSW public service procurement data</p> <p>NSW public service employment data</p> <p>Post-training survey or other follow-up discussions (formal or informal)</p> <p>Visit NSW (<a href="https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours">https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours</a>), or through direct contact with Visit NSW</p> <p>ABS data</p>	<p>Annual</p> <p>Irregularly and opportunistically (post-event), collated annually</p>	<p>Staff are willing to self-identify as being Aboriginal.</p> <p>Measure can be reported without breaching privacy.</p> <p>Initiative 4 staff are able to remain in contact with course/training participants.</p> <p>Relevant businesses list themselves through Visit NSW.</p> <p>Listed businesses provide a suitable sample to identify change over time.</p>

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 7	Aboriginal employment and opportunities in relation to the marine estate	Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	<p>Responsible agencies: the four MEMA agencies</p> <p>Related agencies include other delivery partners, such as LLS, DPE Water, Crown Lands, EPA, NRAR, Heritage NSW, LGAs (do employ and award contracts to aboriginal organisations).</p> <p>Employment opportunities include:</p> <ul style="list-style-type: none"> <li>- Fox Control Program</li> <li>- Bush regeneration works</li> <li>- Pest and weed works</li> <li>- Other on-ground activities</li> <li>- Professional services</li> </ul> <p>Capacity building courses and training opportunities include:</p> <ul style="list-style-type: none"> <li>- Deckhand and Coxswain courses</li> <li>- Education programs</li> </ul>	<p>Number and total value of contracts awarded to Aboriginal-owned entities by responsible and related agencies for services in relation to marine estate management</p> <p>Number of Aboriginal-owned entities that are registered suppliers with responsible and related agencies for provision of services in relation to marine estate management</p> <p>Number of Aboriginal-owned entities that have been contracted by responsible and related agencies to provide services in relation to marine estate management</p> <p>Proportion of addressable spend to Aboriginal businesses (target: &gt; 1 %) in relation to marine estate management</p> <p>Proportion of goods and services contracts to Aboriginal businesses (target: &gt; 3 %) in relation to marine estate management</p> <p>Number of Aboriginal people employed in roles at DPI-F in relation to management of the marine estate:</p> <ul style="list-style-type: none"> <li>- Permanent positions (FTE)</li> <li>- Short-term contracts (&lt; 12 months)</li> <li>- Longer contracts (12+ months)</li> </ul> <p>Number of participants in courses or training supported by Initiative 4 who have secured employment in related fields within 5 years of completing the course/training</p> <p>Number of Aboriginal-owned tourism businesses providing services in relation to the NSW marine estate</p> <p>Number of Aboriginal-owned businesses providing services to marine commercial industries, including aquaculture and commercial wild harvest.</p>	DPI-F (Initiative 4 lead)	<p>NSW public service procurement data</p> <p>NSW public service employment data</p> <p>Post-training survey or other follow-up discussions (formal or informal)</p> <p>Visit NSW (<a href="https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours">https://www.visitnsw.com/things-to-do/aboriginal-cultural-and-adventure-tours</a>), or through direct contact with Visit NSW</p> <p>ABS data</p>	<p>Annual</p> <p>Irregularly and opportunistically (post-event), collated annually</p>	<p>Staff are willing to self-identify as being Aboriginal.</p> <p>Measure can be reported without breaching privacy.</p> <p>Initiative 4 staff are able to remain in contact with course/training participants.</p> <p>Relevant businesses list themselves through Visit NSW.</p> <p>Listed businesses provide a suitable sample to identify change over time.</p>

KPI 8	Trend in ecological sustainability, economic viability and community wellbeing measures for fishing and aquaculture	Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)	<p>Species stock status includes species for commercial, recreational and cultural fishing and harvesting. This may include tracking of species that are currently undefined or for which there is not yet data (to be confirmed). Stock status is progressively assessed.</p> <p>Routinely assessed at varying degrees of quality – can track stock status of relevant species.</p> <p>Commercial and recreational fishers, and aquaculturalists wellbeing considers wellbeing beyond economic factors.</p>	<p>Index of species stock status (no. of stocks assessed vs no. of stocks sustainable/data deficient etc.) Note, measure is still in development. Stock status data is routinely assessed, however a sustainability index is in development.</p> <p>Measure to be developed relevant to recreational fishing wellbeing through the ecological risk assessment</p> <p>Proportion of commercial fishing and aquaculture industry reporting improved sustainability and economic viability in the marine estate</p> <p>Measure of commercial fisher wellbeing</p> <p>Recreational fishing participation (rate of participants per capita)</p> <p>Proportion of recreational fishers reporting satisfaction with the quality of recreational fishing and experiences (%)</p> <p>Average expenditure per recreational fishing activity in NSW</p>	<p>DPI-F (Initiative 6 lead)</p> <p>TBC</p> <p>DPI-F (Initiative 6 lead) in conjunction with Fisheries and Aquaculture Management Unit</p> <p>DPI-F (Initiative 6 lead) in conjunction with Fisheries and Aquaculture Management Unit</p>	<p>Status of Australian Fish Stocks Reports FRDC;</p> <p>Environmental Assessment and Recreational Fishing Management Strategy evaluation and monitoring program**4</p> <p>New South Wales Fisheries Economic and Social Indicator Monitoring (BDO survey commercial fishing)</p> <p>Aquaculture Stage 3 economic valuation analysis**</p> <p>New South Wales Fisheries Economic and Social Indicator Monitoring (BDO survey)</p> <p>Recreational Fishing Integrated Monitoring Program; (2K random selected diarists; charter boat data; some observer and creel survey data)</p> <p>Recreational Fisheries Monitoring Program; - phone-diary 'Washup Survey' – recreational fisher satisfaction Coastal Residents and Visitor Survey</p> <p>Recreational Fisheries Monitoring Program; (~2K randomly</p>	<p>Annual</p> <p>Annually ** (this hasn't commenced)</p> <p>Annual from 2021-23 (stage 3 funding requested to continue through 2028)</p> <p>Biennial</p> <p>Biennial, with three to five 3-5 phone-diary surveys over long term MIMP</p> <p>Biennial, with 3-5 phone-diary surveys over long term MIMP</p>	<p>Sustainability index can and will be developed by DPI-F Research team</p> <p>** Assumption that stage 3 funding is obtained for evaluation and monitoring.</p> <p>** Assumption that stage 3 funding is obtained for evaluation and monitoring.</p>
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KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
						selected phone-diary survey participants; charter boat logbook data; charter boat observer monitoring data – visitors to regional areas)		
KPI 9	Trend in ecological and social measures for boating	Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate (7A)	<p>Targeted trends include:</p> <ul style="list-style-type: none"> <li>- Reduction in serious injuries and fatalities</li> <li>- Reduced hazards to boating</li> <li>- Reduced environmental impact of boating</li> <li>- Increased satisfaction with boating services and experiences</li> </ul> <p>TfNSW collects and analyses information on boating incidents across NSW. The analysis looks at a range of attributes including incident location, type, contributing factors, outcome, frequency, vessel and operator details.</p> <p>TfNSW conducts a boating survey that looks at a number of criteria relating to boating activity including trip frequency, purpose of trips, types of vessels, exposure rates and a range of satisfactions measures.</p> <p>Environmental Services team collect data on marine estate rubbish and debris, corresponding to data associated with less navigational hazard (safety) and to environmental health (sustainability).</p>	<p>Frequency of fatal and serious injury boating incidents</p> <p>Proportion of survey respondents reporting experiencing boating hazards</p> <p>Number of marine pollution response incidents</p> <p>Proportion of survey respondents reporting satisfaction with boating experiences (see LI 23)</p>	Initiative 7 Lead (TfNSW)	<p>Boating Incidents in NSW, Centre for Maritime Safety</p> <p>Recreational Boating Participation survey</p> <p>Administrative data – Environmental Services Team</p> <p>Recreational boating Participation Survey</p>	Annual	

\*\* Assumption that stage 3 funding is obtained for evaluation and monitoring.

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 10	Community and targeted stakeholders demonstrate improved capacity to anticipate and adapt to climate change impacts	Improved capacity of coastal and marine managers and communities to anticipate climate impacts and identify adaptation pathways (3A)	<p>Baseline of capacity and increasing numbers measures to be determined through the climate change engagement actions and sub actions (3.3) on climate engagement.</p> <p>Post event/engagement survey to be developed as one standardised approach with stakeholders. (TBC, in collaboration with Agency Staff Survey Coordinator)</p> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- NSW Government agencies, local government</li> <li>- Industries of the marine estate</li> <li>- Community</li> <li>- Aboriginal community</li> <li>- Coastal councils</li> <li>- Transport agencies</li> </ul>	Number of community members and targeted stakeholders demonstrating improved capacity from engagement activities	DPE-EHG (Senior Team Leader, Cultural and Ecosystem-based Adaptation (DPE-EHG)) and DPI-F (Initiative 3 lead), in collaboration with Agency Staff Survey Coordinator	<p>Post event/engagement participant feedback survey.</p> <p>Targeted stakeholder survey.</p> <p>Responsible and related agency survey.</p>	<p>Opportunistically following conclusion of specific events, activities or programs. Collated annually.</p> <p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).</p>	Targeted engagement activities are funded.

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 11	Economics benefits indicator	Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)	<p>KPI 11 monitors the broad (overall) status of economic benefits derived from the marine estate. KPI 11 is a suite of performance indicators (dashboard indicators) developed to monitor a subset of economic benefits as part of the Marine Integrated Monitoring Program (MIMP) community well-being indicators.</p> <p>The Economic Benefits WG selected six indicators, which are listed here. Data for these are currently available.</p> <p>In addition, the WG agreed on several potential additional analysis/methods to undertake further analysis of these indicators, assess the economic health of the Marine Estate, and to produce annual report cards. Regional case studies would use economic analysis techniques such as calculation of producer/ consumer surplus, willingness to pay survey, travel cost method. Details for this indicator are currently in development.</p>	<p>Nature based visitors expenditure (\$ value):</p> <ul style="list-style-type: none"> <li>- International overnight travel (\$ billion)</li> <li>- Domestic overnight travel (\$ billion)</li> <li>- Domestic daytrip travel (\$ billion)</li> </ul> <p>Commercial fishery GVP (\$ value):</p> <ul style="list-style-type: none"> <li>- Commercial (wild catch)</li> <li>- Aquaculture</li> </ul> <p>Willingness-to-pay of visiting beaches (\$ value)</p> <p>Number of recreational fishing licences</p> <p># Registered recreational vessels (not including personal watercraft registrations)</p> <p>Tourism industry employment (#)</p> <ul style="list-style-type: none"> <li>- Sydney</li> <li>- Central Coast</li> <li>- Hunter</li> <li>- North Coast</li> <li>- South Coast</li> </ul>	DPI-F (Economic TWG lead)	<a href="https://www.destinationnsw.com.au/tourism/facts-and-figures/market-segments">https://www.destinationnsw.com.au/tourism/facts-and-figures/market-segments</a> <a href="https://www.agriculture.gov.au/abares/research-topics/fisheries">https://www.agriculture.gov.au/abares/research-topics/fisheries</a> <a href="https://www.sciencedirect.com/science/article/abs/pii/S0964569118307555?via%3Dihub">https://www.sciencedirect.com/science/article/abs/pii/S0964569118307555?via%3Dihub</a> <a href="https://www.dpi.nsw.gov.au/about-us/publications/pdi/2018/recreational-fishing">https://www.dpi.nsw.gov.au/about-us/publications/pdi/2018/recreational-fishing</a> <a href="https://www.tra.gov.au/Economic-analysis/Economic-Value/Regional-Tourism-Satellite-Account/regional-tourism-satellite-account">https://www.tra.gov.au/Economic-analysis/Economic-Value/Regional-Tourism-Satellite-Account/regional-tourism-satellite-account</a> <a href="https://roads-waterways.transport.nsw.gov.au/about/corporate-publications/annual-reports.html">https://roads-waterways.transport.nsw.gov.au/about/corporate-publications/annual-reports.html</a>	Annual	Data from external source continues to be collected

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 12	Community, stakeholders and responsible agencies report satisfaction with governance of the marine estate	Improved consistency, coordination and integration among responsible agencies (1F)	<p>Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals within identified stakeholder categories. Unless otherwise specified, all categories will be surveyed. Stakeholder categories are:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities.</li> <li>- Targeted stakeholders and partners, including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.</li> <li>- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future</li> </ul>	Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance	<p>Initiative leads, in conjunction with:</p> <ul style="list-style-type: none"> <li>- DPI-F (Initiative 8 lead - Community)</li> <li>- Agency Staff Survey Coordinator</li> <li>- Stakeholder survey coordinator</li> </ul>	<p>Coastal Residents Survey</p> <p>Agency staff survey</p> <p>Targeted stakeholder survey</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 12	Community, stakeholders and responsible agencies report satisfaction with governance of the marine estate	Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)	<p>Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.</p> <p>Data collection will be undertaken through a survey of individuals who have used the tools, including online interaction and feedback within the following stakeholder groups:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities with roles and responsibilities as outlined in the domestic waterfront structures strategy, marine vegetation strategies, coastal floodplain assessments and drainage management plans.</li> <li>- Targeted stakeholders and partners, including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.</li> </ul>	<p>Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance</p> <p>Number of downloads/demonstrations of use of best practice tools</p>	<p>DPI-F (Initiative 2 lead).</p> <p>Agency Staff Survey Coordinator</p> <p>Stakeholder Survey Coordinator</p>	<p>Agency staff survey</p> <p>Targeted stakeholder survey</p> <p>Administrative data</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 12	Community, stakeholders and responsible agencies report satisfaction with governance of the marine estate	Community, stakeholders and responsible agencies report satisfaction with governance of the marine estate (9A)	<p>Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals within identified stakeholder categories. Unless otherwise specified, all categories will be surveyed. Stakeholder categories are:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities.</li> <li>- Targeted stakeholders and partners, including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.</li> <li>- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future</li> </ul>	Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance	DPI-F (Initiative 8 lead) - Community  Agency Staff Survey Coordinator  Stakeholder survey Coordinator	Coastal Residents Survey  Sea Country (marine estate) survey  Agency staff survey  Targeted stakeholder survey	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 12	Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate	Improved efficiency and effectiveness in managing the marine estate (9B)	<p>Satisfaction to be assessed through concise measures for each of the following governance themes: coordination, consistency, transparency and inclusiveness. Details for measures are provided separately.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals within identified stakeholder categories. Unless otherwise specified, all categories will be surveyed. Stakeholder categories are:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities.</li> <li>- Targeted stakeholders (engaged community), including Aboriginal people, community interest groups, industry and peak bodies, conservation groups and avid users of the marine estate, local government; and, researchers.</li> <li>- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future</li> </ul>	Average satisfaction rating based on Likert scale for each measure relating to coordination, consistency, transparency, inclusiveness, and efficiency and effectiveness of governance	<p>DPI-F (Initiative 8 lead) - Community</p> <p>Agency Staff Survey Coordinator</p> <p>Stakeholder survey coordinator</p>	<p>Coastal Residents Survey</p> <p>Sea Country (marine estate) survey</p> <p>Agency staff survey</p> <p>Targeted stakeholder survey</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
KPI 13	Community members report awareness and appreciation of the significance of Sea Country values	The broader NSW community has a greater appreciation of the significance of Sea Country for Aboriginal people (4D)	Community members, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future.	Proportion of survey participants reporting awareness and appreciation (%)	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 13	Community members report awareness and appreciation of the significance of Sea Country values	Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)	Community members, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future.	Proportion of survey participants reporting awareness and appreciation (%)	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
KPI 14	Agency staff report using decision-making and approvals processes for foreshore and coastal land use management, design and development that balances social and economic benefits with enhancing coastal and marine habitats	Improved design and management of foreshore and coastal land use and development, balancing social and economic benefits of development with enhanced coastal and marine habitat (2A)	<p>Specific decision-making and approvals processes include those relating to:</p> <ul style="list-style-type: none"> <li>- Foreshore development and use</li> <li>- Coastal floodplain and infrastructure management</li> <li>- Other relevant coastal systems</li> </ul> <p>Relevant agency staff include DPE-P, NRAR, Crown Lands and others with their roles and responsibilities as outlined in the domestic waterfront structures strategy, marine vegetation strategies, coastal floodplain assessments and drainage management plans.</p>	Proportion of survey respondents reporting use of identified processes	DPI-F (Initiative 2 lead).  Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	The survey will be designed to support accurate self-reporting, and that use of these processes is effective and appropriate.

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 15	Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders	Improved adoption of best practice land management and compliance with rules and regulations for managing water pollution and litter (1D)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Land use and management;</li> <li>- Water pollution and litter</li> </ul> <p>Best practice approaches and processes include:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Fertiliser management</li> <li>- Blueberry nutrition guidelines</li> <li>- Macadamia nut nutrient replacement</li> <li>- Farm water and nutrient management</li> <li>- Erosion mitigation practices</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Ag industries</li> <li>- construction industry</li> <li>- landholders / participants in on-ground works;</li> <li>- Councils</li> </ul>	<p>Proportion of survey respondents self-reporting use of best practice approaches and processes, including the Risk-based Framework</p> <p>Number of planning instruments and land use plans that embed the Risk-based Framework</p> <p>Number of works contracts and maintenance agreements that embed relevant best practice</p> <p>Number of signed landholder agreements that embed relevant best practice</p> <p>Number of event participants (peak body members) reporting use of best practice approaches relevant to their industry</p>	<p>Initiative lead(s)</p> <p>Agency Staff Survey Coordinator</p> <p>Stakeholder Survey Coordinator</p> <p>DPE-EHG (Initiative 1A lead)</p> <p>Initiative lead(s), in conjunction with LLS and DPI Ag delivery partner leads</p> <p>Initiative lead(s), in conjunction with LLS delivery partner leads</p> <p>Initiative lead(s), or nominated delegate(s)</p>	<p>Agency staff survey</p> <p>Targeted stakeholder survey.</p> <p>Program management (administrative) data.</p> <p>Development Control Plans (online)</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p> <p>Post-event surveys, both immediately after and 12 months after.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically as relevant projects are completed, collated annually</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 15	Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders	Increased adoption of best practice design and management of foreshore and coastal planning, development and use (2E)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Land use and management</li> <li>- Water pollution</li> </ul> <p>Use of best practice approaches and processes include:</p> <ul style="list-style-type: none"> <li>- Specific documented approaches and processes</li> <li>- Adoption into council/related stakeholder processes i.e. references in plans, adoption of those areas as coastal wetland areas.</li> <li>- Risk-based Framework</li> <li>- Estuary specific strategies</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Responsible and related agencies</li> </ul> <p>Use/adoption of processes, agreements, contracts that incorporate best practice could include:</p> <ul style="list-style-type: none"> <li>- Number of planning instruments and land use plans providing direction to use the Risk-based Framework</li> <li>- Number of works contracts and maintenance agreements</li> <li>- Number of landholder agreements signed</li> <li>- Tracking adoption / penetration of Strategies into planning documents, e.g. CMPs, LEPs and SEPPs</li> </ul>	<p>Proportion of survey respondents self-reporting use of best practice approaches and processes (%)</p> <p>Length of foreshore where a foreshore structure strategy applies (km)</p> <p>Areal extent of estuary foreshore and coastal floodplain managed by strategy for improved social, cultural, economic and environmental values (km<sup>2</sup>)</p> <p>Number of estuary specific strategies and other tools</p> <p>Number of signed landholder agreements that embed relevant best practice</p> <p>Number of works contracts and maintenance agreements that embed relevant best practice</p>	<p>DPI-F (Initiative 2 lead)</p> <p>Agency Staff Survey Coordinator</p> <p>Stakeholder Survey Coordinator</p> <p>DPI-F (Initiative 2 lead), DPE-EHG (Initiative 1a lead)</p>	<p>Agency staff survey</p> <p>Targeted stakeholder survey.</p> <p>Program management (administrative) data.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically as relevant projects are completed, collated annually</p>	
KPI 15	Adoption of best practice approaches and processes for undertaking activities related to the marine estate among the community and targeted stakeholders	Increased community adoption of safe and sustainable use of the marine estate (8B)	Indicator to be explored through questions in the Initiative 8 monitoring plan	Proportion of survey respondents reporting use of best practice approaches and processes (%)	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey and Visitors Survey, Youth Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of behaviour, social acceptability bias is not driving response by survey participants.

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 16	Responsible and related agencies report satisfaction with efficiency and effectiveness governance of the marine estate	Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)	<p>Stakeholder satisfaction will be assessed through the following measures (assessed separately for consistency within own organisation and across responsible agencies):</p> <ul style="list-style-type: none"> <li>- Allocation of resources, including staff and funding, across management of the marine estate is clearly directed towards identified outcomes</li> <li>- Systems, processes, skills, knowledge and governance and administrative arrangements allow organisations and individuals to efficiently and effectively deliver their responsibilities, with minimal duplication, unreasonable delays or unnecessary activities</li> <li>- Responsible agencies are achieving, or on track to achieve, identified outcomes within budget</li> </ul> <p>Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities; local government; and, researchers.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals from responsible and related agencies, including marine estate managers from relevant government departments, agencies, statutory authorities and local government</p>	Average satisfaction rating based on Likert scale for each measure	DPI-F (Initiative 2 lead).  Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 16	Responsible and related agencies report satisfaction with efficiency and effectiveness governance of the marine estate	Improved efficiency and effectiveness in managing the marine estate (9B)	<p>Stakeholder satisfaction will be assessed through the following measures (assessed separately for consistency within own organisation and across responsible agencies):</p> <ul style="list-style-type: none"> <li>- Allocation of resources, including staff and funding, across management of the marine estate is clearly directed towards identified outcomes</li> <li>- Systems, processes, skills, knowledge and governance and administrative arrangements allow organisations and individuals to efficiently and effectively deliver their responsibilities, with minimal duplication, unreasonable delays or unnecessary activities</li> <li>- Responsible agencies are achieving, or on track to achieve, identified outcomes within budget</li> </ul> <p>Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities; local government; and, researchers.</p> <p>Data collection will be undertaken through a survey of randomly selected individuals from responsible and related agencies, including marine estate managers from relevant government departments, agencies, statutory authorities and local government</p>	Average satisfaction rating based on Likert scale for each measure	Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
KPI 17	Risk rating to threatened and protected species in the NSW marine estate	Reduced threats to threatened and protected marine species in NSW (5A)	<p>Inputs that demonstrate reducing the threat to protected species regardless of the future level of risk.</p> <p>To provide narrative behind to justify that risk rating/assessment including TARA threat ratings.</p>	Reduction in risk ratings for threats to threatened and protected species (proportion of risk ratings maintained or reduced)	DPE-EHG (Initiative 5 lead)	TARA - baseline and TARA reviews	With each review of the TARA (5 yearly)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
KPI 18	Community reports satisfaction with the health of their local waterways	Waterway health in the marine estate aligns with community values (1A)	Relates to Question 1 in the draft NSW Water Quality Objectives Survey	Proportion of survey respondents reporting satisfaction with the health of waterway(s) in their local area (% reporting "satisfied" or "highly satisfied")	DPE-EHG (Initiative 1A lead) Specific action lead(s)	NSW Water Quality Objectives Survey (Question 1 in draft survey)	Water Quality Objectives Survey: 2021 with potential for repeated surveys or survey questions.	Future data collection is funding dependent
KPI 19	Reduction in TARA risk levels relating to Aboriginal cultural heritage and use	Reduced threats to Aboriginal cultural heritage and use in the marine estate (4B)	Inputs that demonstrate reducing the threat to Aboriginal cultural heritage and use  Indicator results to be accompanied by narrative that explains risk rating/assessment.	Reduction in risk ratings for threats to Aboriginal cultural heritage and use (proportion of risk levels maintained or reduced)	DPI-F (Initiative 4 lead)	Threat and Risk Assessment (TARA), baseline and TARA reviews	With each review of the TARA (5 yearly)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 1	Reduction in annual pollutant load estimates (modelled or measured), in pilot areas, comparing business as usual with new management actions	Reduction in input pollutants to waterways at targeted sites within pilot areas (1H)	<p>Targeted sites include those identified through the MEMS actions and projects.</p> <p>Measures will only be applied where relevant to actions and projects.</p>	<p>Estimated reduction in annual total suspended solids (TSS) in target waterways</p> <p>Estimated reduction in annual total nitrogen (TN) in target waterways</p> <p>Estimated reduction in annual total phosphorus (TP) in target waterways</p> <p>Estimated tonnes of soil/sediment prevented from entering waterways (t)</p> <p>Estimated reduction in annual runoff volume in target catchments.</p> <p>Modelled or measured improvement or maintained levels of relevant stressors</p>	<p>DPE-EHG Initiative 1A - relevant project leads</p> <p>DPE-EHG Initiative 1A lead (or specific action lead)</p> <p>DPE-EHG Initiative 1A lead (or specific action lead)</p> <p>DPI-F (Initiative 1B lead) in conjunction with LLS delivery partner leads</p> <p>DPE-EHG Initiative 1B lead, in conjunction with DPI Ag project leads</p> <p>DPE-EHG Initiative 1A lead (or specific action lead)</p>	Program management (administrative) data.	<p>Documented opportunistically as relevant projects or project milestones are completed, collated annually</p> <p>Documented opportunistically as works completed, collated annually</p>	

LI 2	Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality	Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)	<p>Relevant frameworks, policies and processes include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul> <p>For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners</p> <p>For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WNSW, TfNSW, LLS</p> <p>NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures</p> <p>New/updated processes for works approvals to align with include:</p> <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> <p>(additional processes TBC with Initiative 2)</p>	<p>Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations</p> <p>Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes</p> <p>Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes</p> <p>Number of times toolkit on Risk-based Framework is accessed</p> <p>Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information</p> <p>Future measure: number of views and downloads of Coastal Floodplain Study results</p> <p>Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)</p> <p>Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)</p> <p>Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)</p>	<p>Initiative lead(s), in conjunction with Stakeholder Survey Coordinator</p> <p>Initiative lead(s)</p> <p>Initiative lead(s), in conjunction with Agency Staff Survey Coordinator</p> <p>DPE-EHG (Initiative 1A lead)</p> <p>DPI-F (Initiative 1B lead)</p>	<p>Targeted stakeholder survey</p> <p>Agency Staff survey</p> <p>Post-training survey</p> <p>Agency staff survey</p> <p>Website analytics</p> <p>Targeted stakeholder survey</p> <p>Program management (administrative) data SEED</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically as events/training completed, collated annually</p> <p>Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically, collated annually</p> <p>Documented opportunistically as relevant documents completed/identified, collated annually</p> <p>Annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as works applications</p>
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KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
							approved, collated annually	

LI 2	Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality	Improved consistency, coordination and integration among responsible agencies (1F)	<p>Relevant frameworks, policies and processes include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul> <p>For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners</p> <p>For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WaterNSW, TfNSW, LLS</p> <p>NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures</p> <p>New/updated processes for works approvals to align with include:</p> <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> <p>(additional processes TBC with Initiative 2)</p>	<p>Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations</p> <p>Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes</p> <p>Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes</p> <p>Number of times toolkit on Risk-based Framework is accessed</p> <p>Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information</p> <p>Future measure: number of views and downloads of Coastal Floodplain Study results</p> <p>Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)</p> <p>Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)</p> <p>Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)</p>	<p>Initiative lead(s), in conjunction with Stakeholder Survey Coordinator</p> <p>Initiative lead(s)</p> <p>Initiative lead(s), in conjunction with Agency Staff Survey Coordinator</p> <p>DPE-EHG (Initiative 1A lead)</p> <p>DPI-F (Initiative 1B lead)</p>	<p>Targeted stakeholder survey</p> <p>Agency Staff survey</p> <p>Post-training survey</p> <p>Agency staff survey</p> <p>Website analytics</p> <p>Targeted stakeholder survey</p> <p>Program management (administrative) data SEED</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically as events/training completed, collated annually</p> <p>Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically, collated annually</p> <p>Documented opportunistically as relevant documents completed/identified, collated annually</p> <p>Annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as works applications</p>	
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KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
							approved, collated annually	

LI 2	Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality	Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)	<p>Relevant frameworks, policies and processes include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul> <p>For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners</p> <p>For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WNSW, TfNSW, LLS</p> <p>NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures</p> <p>New/updated processes for works approvals to align with include:</p> <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> <p>(additional processes TBC with Initiative 2)</p>	<p>Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations</p> <p>Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes</p> <p>Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes</p> <p>Number of times toolkit on Risk-based Framework is accessed</p> <p>Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information</p> <p>Future measure: number of views and downloads of Coastal Floodplain Study results</p> <p>Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)</p> <p>Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)</p> <p>Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)</p>	<p>Initiative lead(s), in conjunction with Stakeholder Survey Coordinator</p> <p>Initiative lead(s)</p> <p>Initiative lead(s), in conjunction with Agency Staff Survey Coordinator</p> <p>DPE-EHG (Initiative 1A lead)</p> <p>DPI-F (Initiative 1B lead)</p>	<p>Targeted stakeholder survey.</p> <p>Agency Staff survey</p> <p>Post-training survey</p> <p>Agency staff survey</p> <p>Website analytics</p> <p>Targeted stakeholder survey</p> <p>Program management (administrative) data SEED</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically as events/training completed, collated annually</p> <p>Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically, collated annually</p> <p>Documented opportunistically as relevant documents completed/identified, collated annually</p> <p>Annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as works applications</p>	
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KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
							approved, collated annually	

LI 2	Relevant agency staff demonstrate use of the risk-based framework and other relevant frameworks, policies and processes for managing water quality	Improved access to, use, coordination and efficiency of frameworks, policies and processes by responsible agencies for managing water quality and litter (1L)	<p>Relevant frameworks, policies and processes include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- Legislation and policies that use community values and uses of the marine estate as a benchmark for setting management targets</li> <li>- Local and regional plans</li> </ul> <p>For demonstrated use of Risk-based Framework, relevant agencies include: Local Councils, DPE and DPI staff, state own corporations such as WaterNSW and Sydney Water, Coastal Council and industry practitioners</p> <p>For other frameworks, policies and processes, relevant agencies include: Local councils; DPE-EHG, INSW, EPA, SW, GSC, DPE, DPI, WNSW, TfNSW, LLS</p> <p>NB: For 1.2 – will be med term use of outcomes of 1.2.7 (Coastal Floodplain Drainage Management) and 1.2.8 (Offset/PLC) new policies and procedures</p> <p>New/updated processes for works approvals to align with include:</p> <ul style="list-style-type: none"> <li>- Aquatic Biodiversity Offsets</li> <li>- Coastal Floodplain Drainage Management</li> <li>- Coastal design Guidelines</li> <li>- Domestic Foreshore Structures Strategy</li> <li>- Construction Sediment &amp; Management conditions</li> </ul> <p>(additional processes TBC with Initiative 2)</p>	<p>Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations</p> <p>Number of participants in workshops, webinars, eLearning or other relevant education events who report improved confidence to apply frameworks, policies and processes</p> <p>Proportion of responsible and related agency staff who report confidence to apply frameworks, policies or processes</p> <p>Number of times toolkit on Risk-based Framework is accessed</p> <p>Number of councils using updated coastal floodplain drainage management or Coastal Floodplains Study information</p> <p>Future measure: number of views and downloads of Coastal Floodplain Study results</p> <p>Number of new Private Land Conservation agreements under the Biodiversity Conservation Act related to coordinated marine and coastal floodplain ecosystem outcomes. (TBC - discuss with Initiative 2)</p> <p>Hectares of marine and coastal floodplain ecosystem habitats protected under PLC agreements or Biodiversity Offsets. (TBC - discuss with Initiative 2)</p> <p>Number of works approvals in alignment with new processes (TBC - discuss with Initiative 2)</p>	<p>Initiative lead(s), in conjunction with Stakeholder Survey Coordinator</p> <p>Initiative lead(s)</p> <p>Initiative lead(s), in conjunction with Agency Staff Survey Coordinator</p> <p>DPE-EHG (Initiative 1A lead)</p> <p>DPI-F (Initiative 1B lead)</p>	<p>Targeted stakeholder survey.</p> <p>Agency Staff survey</p> <p>Post-training survey</p> <p>Agency staff survey</p> <p>Website analytics</p> <p>Targeted stakeholder survey</p> <p>Program management (administrative) data SEED</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p> <p>Program management (administrative) data.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically as events/training completed, collated annually</p> <p>Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically, collated annually</p> <p>Documented opportunistically as relevant documents completed/identified, collated annually</p> <p>Annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as new sites confirmed, collated annually</p> <p>Documented opportunistically as works applications</p>	
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KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
							approved, collated annually	
LI 3	Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)	Current identified knowledge gaps include: - methods, effectiveness and benefits of investment for managing water quality and litter; - research to support agriculture and horticulture industries to reduce nutrient run-off; - others identified in the TARA that relate to Initiative 1	Number of knowledge gaps filled, as identified through the TARA review  Number of threats and risks in the TARA where confidence in the assessment rating improves based on new knowledge generated through Initiative 1	Initiative leads with input from Environmental MIMP Technical Working Group (DPI-F Marine Ecosystems Research Leader / Senior Team Leader – Estuaries and Catchments Science (DPE-EHG)	TARA review process  Published papers and industry advisory material	Five-yearly, in association with the TARA review  Annual reporting collation	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 3	Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible and related agencies (2H)	<p>Current identified knowledge gaps are consistent with the TARA and include:</p> <ul style="list-style-type: none"> <li>- Current land uses in coastal and foreshore environments to address loss of public access availability (in particular limited or lack of access infrastructure to the marine estate, loss of public access) and foreshore works, and to address climate change stressors for both 20 and 50 year projections;</li> <li>- Fish barriers and fish passage (appropriate fishway design and fish barriers);</li> </ul> <p>Type of knowledge gaps include:</p> <ul style="list-style-type: none"> <li>- need to develop and publish assessment tools, and methods for applying such tools</li> </ul>	<p>Number of knowledge gaps filled, as identified through the TARA review</p> <p>Development of new tools to identify and quantify the spatial extent (km) of coastal land including floodplains and foreshores that are threatened, and that could be prioritised under new management approaches</p>	DPI-F (Initiative 2 lead)	<p>TARA review process</p> <p>Program management (administrative) data.</p> <p>MIMP Environmental MIMP Technical Working Group documentation.</p>	<p>Five-yearly, in association with the TARA review</p> <p>Documented opportunistically as gaps are filled, collated annually</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 3	Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Improved understanding of environmental, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (21)	<p>Current identified knowledge gaps are consistent with the TARA and include:</p> <ul style="list-style-type: none"> <li>- Current and future appropriate land uses for coastal and foreshore environments to address loss of public access availability (in particular limited or lack of access infrastructure to the marine estate, loss of public access) and foreshore works, and to address climate change stressors for both 20 and 50 year projections;</li> <li>- Assessment/policy outcomes for foreshore works (i.e. domestic waterfront structures, riverbank management, marine vegetation strategy work, breakwater structures);</li> <li>- Fish barriers and fish passage (appropriate fishway design and fish barriers);</li> <li>- Floodplain management options;</li> </ul> <p>Type of knowledge gaps include:</p> <ul style="list-style-type: none"> <li>- need to develop and publish assessment tools, and methods for applying such tools</li> <li>- identifying planning opportunities and constraints, and develop methods to integrate planning and land use management.</li> </ul>	<p>Number of knowledge gaps filled, as identified through the TARA review</p> <p>Number of knowledge gaps filled through assessments undertaken using new methods and tools developed through Initiative 2 actions (such as the development of new tools to identify and quantify the spatial extent (km) of coastal land including floodplains and foreshores that are threatened, and that could be prioritised under new management approaches)</p>	DPI-F (Initiative 2 lead)	<p>TARA review process</p> <p>Program management (administrative) data and outputs.</p> <p>MIMP Environmental MIMP Technical Working Group documentation.</p>	<p>Five-yearly, in association with the TARA review</p> <p>Documented opportunistically as gaps are filled (i.e., outputs are completed), and collated annually</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 3	Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)	Current identified knowledge gaps include: - Likely future impacts of climate change - Others identified in the TARA	Number of knowledge gaps filled, as identified through the TARA review  Number of assets systematically monitored	DPI-F / DPE-EHG	TARA review process  Program management (administrative) data.  MIMP Environmental MIMP Technical Working Group documentation.	Five-yearly, in association with the TARA review.  Documented opportunistically as gaps are filled, collated annually.	
LI 3	Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Improved knowledge of the likely future impacts of climate change on environmental values related to key components of the marine estate (3C)	Current identified knowledge gaps include: - Likely future impacts of climate change - Others identified in the TARA	Number of knowledge gaps filled, as identified through the TARA review  Number of assets systematically monitored	DPI-F / DPE-EHG	TARA review process  Program management (administrative) data.  MIMP Environmental MIMP Technical Working Group documentation.	Five-yearly, in association with the TARA review.  Documented opportunistically as gaps are filled, collated annually.	
LI 3	Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Ongoing and likely effects of climate change on the marine estate are researched and monitored (3D)	Current identified knowledge gaps include: - Likely future impacts of climate change - Others identified in the TARA	Number of knowledge gaps filled, as identified through the TARA review  Number of assets systematically monitored	DPI-F / DPE-EHG	TARA review process  Program management (administrative) data.  MIMP Environmental MIMP Technical Working Group documentation.	Five-yearly, in association with the TARA review.  Documented opportunistically as gaps are filled, collated annually.	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 3	Knowledge gaps adequately addressed. Knowledge gaps relate to threats, stressors, risks, condition, value and management approaches	Improved information base on human dimensions of the marine estate relevant to management (8D)	Current identified knowledge gaps include inadequate social, cultural and economic data	Number of knowledge gaps with status changing from 'inferred' to 'adequate'.  Number of research/information reports provided.  Number of threats and risks in the TARA where confidence in the assessment rating improves based on new knowledge generated through Initiative 8	DPI-F (Initiative 8 lead); with input from MIMP TWG	Program administrative data Review against TARA	Five-yearly, in association with the TARA review	Knowledge gaps are reviewed through review of the TARA
LI 4	Aquatic and marine habitat connectivity	Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)	Types of habitats include all water dependent ecosystems in coastal catchment draining to marine estate, e.g.: - Riverine/aquatic habitat - Riparian vegetation - Ground water dependent ecosystems (surface and sub-surface) - Key Fish Habitat - Wetlands	Waterway length opened up for aquatic habitat connectivity (km)  Area of connected habitat (ha)  Length of connected riparian habitat (km)	DPI-F (Initiative 2 lead)  DPI-F (Initiative 1B lead) in conjunction with LLS delivery partner leads  DPI-F (Initiative 1B lead) in conjunction with LLS delivery partner leads	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	
LI 4	Aquatic and marine habitat connectivity	Improved habitat connectivity in prioritised regions (2F)	Types of habitats include all water dependent ecosystems in coastal catchment draining to marine estate, e.g.: - Riparian vegetation - Ground water dependent ecosystems (surface and sub-surface) - Key Fish Habitat - Wetlands	Waterway length opened up (km)  Area of connected habitat (ha)	DPI-F (Initiative 2 lead)	Program management (administrative) data.	Documented opportunistically as relevant projects are completed, collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 5	Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- General management of the marine estate;</li> <li>- Water quality and litter management;</li> </ul> <p>For water quality, responsible and related agencies include: DPE-EHG, DPI, TfNSW, OLG, GSC, DPC, Sydney Water, LLS, DPE, LLS, WaterNSW, Local Councils.</p> <p>For litter: TBC</p> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents demonstrating clarity	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
LI 5	Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	Improved consistency, coordination and integration among responsible agencies (1F)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- general management of the marine estate;</li> <li>- water quality and litter management;</li> </ul> <p>For water quality, responsible and related agencies include: DPE-EHG, DPI, TfNSW, OLG, GSC, DPC, Sydney Water, LLS, DPE, LLS, WaterNSW, Local Councils.</p> <p>For litter: TBC</p> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents demonstrating clarity	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 5	Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	Greater clarity of roles, responsibilities and accountabilities among all agencies responsible for water quality and litter management (1K)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- general management of the marine estate;</li> <li>- water quality and litter management;</li> </ul> <p>For water quality, responsible and related agencies include: DPE-EHG, DPI, TfNSW, OLG, GSC, DPC, Sydney Water, LLS, DPE, LLS, WaterNSW, Local Councils.</p> <p>For litter: TBC</p> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents demonstrating clarity	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
LI 5	Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	Improved clarity of roles and responsibilities for coastal and foreshore planning and management among targeted agencies, landholders and developers (2G)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- foreshore development and use</li> <li>- coastal floodplain and infrastructure management</li> </ul> <p>Relevant agency staff include DPE-P, NRAR, Crown Lands, Local governments and others with their roles and responsibilities as outlined in the domestic waterfront structures strategy, marine vegetation strategies, coastal floodplain assessments and drainage management plans.</p>	Proportion of survey respondents demonstrating clarity and reporting application of new tools in routine planning responsibilities among targeted agencies	DPI-F (Initiative 2 lead); Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 5	Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	Improved interagency coordination and management of threatened and protected species. (5H)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Threatened and protected species</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Local councils</li> <li>- State government agencies</li> </ul>	<p>Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)</p> <p>Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)</p> <p>Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)</p>	<p>DPE-EHG (Initiative 5 lead)</p> <p>Agency Staff Survey Coordinator</p>	<p>Pre and post workshop/training event survey to demonstrate increased collaboration among agencies</p> <p>After-action surveys/reviews to demonstrate increased collaboration among agencies</p> <p>Responsible Agency Staff Survey</p>	<p>Irregularly and opportunistically (post-event), collated annually</p> <p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p>	<p>Post-event surveys are conducted following suitable samples of workshops, seminars, training, etc.</p> <p>After action reviews capture interagency relationships and can show change over time. There is now a communication pathway in incident response, how we numerical assign, time and style of sharing, who. Staff surveys could show this change but may underrepresent it (sample size, scope, questions)</p>
LI 5	Responsible and related agencies demonstrate clarity of roles, responsibilities and accountabilities for managing the marine estate	Greater clarity of roles, responsibilities and accountabilities and improved capacity to fulfil roles among all responsible agencies (9H)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- General management of the marine estate</li> </ul> <p>Agencies include responsible agencies only</p>	<p>Proportion of survey respondents demonstrating clarity</p> <p>Number of activities/processes that demonstrate greater clarity of roles, responsibilities and accountability and improved capacity or demonstrations of governance.</p>	<p>DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator</p>	<p>Agency staff survey</p> <p>Administrative data - findings from quarterly reporting, reviews, process evaluation results, external assessments such as REAF report.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Collated biennially (ideally), or minimum of three (3) over the life of the MEMS.</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 6	Responsible agencies report improved simplicity, clarity and efficiency for regulatory processes and approvals	Improved simplicity, efficiency and clarity of processes for land use and development planning and approvals in coastal and foreshore zones (2D)	<p>Regulatory processes and approvals such as:</p> <ul style="list-style-type: none"> <li>- Land use and development planning and approvals in coastal and foreshore zones</li> <li>- Crown Land consent for work on crown land</li> </ul> <p>Responsible agencies include:</p> <ul style="list-style-type: none"> <li>- Councils</li> <li>- All MEMA agencies and Departments within their cluster</li> </ul>	<p>Proportion of responsible agency staff who report experiencing improved simplicity, clarity and efficiency to manage regulatory processes and approvals</p> <p>Reduction in the number of regulatory assessments or approvals concerning lineal length of estuary or areal extent of intertidal coastal wetlands where referrals may be generated for assessment by agency staff</p>	<p>DPI-F (Initiative 2 lead).</p> <p>Agency Staff Survey Coordinator</p>	<p>Agency Staff survey</p> <p>Program management (administrative) data.</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).</p> <p>Documented opportunistically as relevant projects are completed, collated annually</p>	
LI 6	Responsible agencies report improved simplicity, clarity and efficiency for regulatory processes and approvals	Improved consistency, coordination and integration among responsible agencies (9C)	<p>Regulatory processes and approvals such as:</p> <ul style="list-style-type: none"> <li>- Land use and development planning and approvals in coastal and foreshore zones</li> <li>- Crown Land consent for work on crown land</li> <li>- Marine park permits</li> <li>- DPI s.37 permits</li> <li>- Commercial fishing approvals</li> <li>- Aquaculture</li> <li>- Rec fishing</li> <li>- DPE-EHG to confirm</li> <li>- TfNSW to confirm</li> </ul> <p>Responsible agencies include:</p> <ul style="list-style-type: none"> <li>- All MEMA agencies and Departments within their cluster</li> </ul>	<p>Proportion of responsible agency staff who report experiencing improved simplicity, clarity and efficiency to manage regulatory processes and approvals</p>	<p>DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator</p>	<p>Agency Staff survey</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 6	Responsible agencies report improved simplicity, clarity and efficiency for regulatory processes and approvals	Simpler and clearer regulatory processes and roles for agencies and communities (9G)	<p>Regulatory processes and approvals such as:</p> <ul style="list-style-type: none"> <li>- land use and development planning and approvals in coastal and foreshore zones</li> <li>- Crown land consent for work on crown land</li> <li>- Marine park permits</li> <li>- DPI s.37 permits</li> <li>- Commercial fishing approvals</li> <li>- Aquaculture</li> <li>- Rec fishing</li> <li>- DPE-EHG to confirm</li> <li>- TfNSW to confirm</li> </ul> <p>Responsible agencies include:</p> <ul style="list-style-type: none"> <li>- All MEMA agencies and Departments within their cluster</li> </ul> <p>Community members includes those who seek approvals or other information in relation to regulatory processes</p>	Proportion of responsible agency staff who report experiencing improved simplicity, clarity and efficiency to manage regulatory processes and approvals	DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	Agency Staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	
LI 7	Agency staff report using information relating to social, cultural, economic and environmental values in their strategies, plans, programs and decision-making processes	Improved integration of information related to threatened and protected species to inform decision making (5D)	<p>Includes incorporation throughout planning, implementation and reporting of:</p> <ul style="list-style-type: none"> <li>- Community objectives and values</li> <li>- Aboriginal objectives, values, rights and interests</li> <li>- Unintended consequences of programs and plans</li> <li>- Economic benefits/costs</li> </ul> <p>Relevant strategies, plans, programs and processes include (but not limited to):</p> <ul style="list-style-type: none"> <li>- Managing threatened and protected species</li> </ul>	Rate of agency staff reporting use of information relating to social, cultural, economic and environmental values	Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 7	Agency staff report using information relating to social, cultural, economic and environmental values in their strategies, plans, programs and decision-making processes	Social, cultural and economic values are better incorporated into planning and management of the marine estate (8C)	Indicator to be explored through the following question: TBC	Proportion of agency staff reporting use of information relating to social, cultural, economic and environmental values	Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
LI 8	New or improved processes or events for sharing knowledge among responsible agencies, and between responsible agencies and targeted stakeholders and the community	Improved understanding and sharing of information across stakeholders of threats to threatened and protected species (5C)	Includes knowledge sharing in relation to: - threatened and protected species - impacts of climate change	Number of new or improved processes, networks or events	DPE-EHG (Initiative 5 lead)	Administrative data	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 8	New or improved processes or events for sharing knowledge among responsible agencies, and between responsible agencies and targeted stakeholders and the community	Improved knowledge sharing and communication among responsible agencies (9D)	Includes knowledge sharing in relation to: - all new and improved processes across the program, as all are relevant to i9.  Interagency knowledge sharing and communication processes include: - MEMA meetings - MASC meetings - Initiative Working Group meetings - Quarterly 'snapshot' report - MEMA confidential quarterly report - Marine Estate website, including Initiative profile pages - Presentations - Conferences (e.g., NSW Coastal Conference 2019) - Marine Estate newsletters - Program Plan - Implementation Plan - Health Check and Stage 2 Requirements	Number of new or improved processes, networks, data sharing platforms or events  Proportion of respondents satisfied with improvements to processes (through agency staff survey)	DPI (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	Administrative data i.e., Annual report figures which can be measured regularly and relate to the new or improved processes.  Agency staff survey (to include a question on whether the staff processes have been improved, and whether knowledge sharing has improved)	Collated biennially (ideally), or minimum of three (3) over the life of the MEMS.  Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
LI 8	New or improved processes or events for sharing knowledge among responsible agencies, and between responsible agencies and targeted stakeholders and the community	Improved processes for knowledge sharing and communication among responsible agencies (9I)	Includes knowledge sharing in relation to: - all new and improved processes across the program, as all are relevant to i9.  Interagency knowledge sharing and communication processes include: - MEMA meetings - MASC meetings - Initiative Working Group meetings - Quarterly 'snapshot' report - MEMA confidential quarterly report - Marine Estate website, including Initiative profile pages - Presentations - Conferences (e.g., NSW Coastal Conference 2019) - Marine Estate newsletters - Program Plan - Implementation Plan - Health Check and Stage 2 Requirements	Number of new or improved processes, networks, data sharing platforms or events.  Proportion of respondents satisfied with improvements to processes (through agency staff survey)	DPI (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	Administrative data i.e., Annual report figures which can be measured regularly and relate to the new or improved processes.  Agency staff survey (to include a question on whether the staff processes have been improved, and whether knowledge sharing has improved)	Collated biennially (ideally), or minimum of three (3) over the life of the MEMS.  Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 9	Related agencies report improved understanding of current coastal and foreshore land uses in prioritised regions	Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible and related agencies (2H)	Includes testing awareness and use of methods, maps and other tools for identifying coastal and foreshore land uses.  Prioritised regions include: - Clarence to Tweed - Bulli to Batemans  Targeted related agencies include: - DPE-P - NRAR - Crown Lands - DPE-EHG	Proportion of relevant agency staff reporting improved understanding of current coastal and foreshore land uses (%)	Agency Staff Survey Coordinator	Agency Staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).	
LI 10	Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	Greater community awareness of the sources and effects of water pollution and litter on the marine estate (1M)	Includes threats relating to: - Sources and effects of water pollution and litter in the marine estate - Coastal floodplain water quality  Includes benefits relating to: - Waterways in the marine estate - changing land use practices within coastal floodplains and landscapes. - marine litter campaign - NSW Water Quality Objectives  Targeted action-based stakeholders include: - 1.2.9, 1.2.13, 1.2.10 Council staff, construction industry, etc; - 1.2.11 Specific Ag Industries (Blueberry, Macadamia, GH veggie, cane, dairy); - 1.3.1 Oyster farmer survey about ORR; Targeted stakeholders general: Construction industry, recreational waterway users, commercial and recreational fishing users, horticulturalists, graziers, general community, downstream users (oyster farmers, fishers), coastal floodplain landholders.	Proportion of survey respondents demonstrating awareness threats and benefits (community)  Proportion of survey respondents demonstrating awareness of potential threats from their industry (targeted stakeholders)  Number of participants in webinars or other relevant education events who report improved awareness of benefits of and threats to the marine estate	DPI-F (Initiative 8 lead) - Community  Initiative lead(s)  Relevant action lead(s)  Water quality objectives survey co-ordinator Stakeholder survey coordinator  Initiative lead(s)  DPI-F (Initiative 1B lead – post event surveys), or nominated delegate(s)	Coastal Residents Survey and Visitors Survey,  NSW Water Quality Objectives Survey  Targeted stakeholder surveys  Post-event survey  Program management (administrative) data.	RRVS: Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).  Water Quality Objectives Survey: 2021 with potential for repeated surveys or survey questions.  Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)  Documented opportunistically as events completed, collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 10	Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)	Includes: <ul style="list-style-type: none"> <li>- threats identified in the TARA relating to impacts of climate change on the marine estate</li> <li>- benefits of adapting to climate change impacts</li> <li>- willingness to adapt to climate change impacts</li> </ul> Targeted stakeholders include: <ul style="list-style-type: none"> <li>- NSW Government agencies, local government</li> <li>- industries of the marine estate</li> <li>- community</li> <li>- Aboriginal community</li> <li>- Coastal councils</li> <li>- Transport agencies</li> </ul>	Proportion of survey respondents demonstrating awareness of benefits and threats	DPE research - coordinator stakeholder surveys (Agency Staff Survey Coordinator).	Targeted stakeholder surveys.	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	
LI 10	Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)	Includes threats relating to threatened and protected species.  Targeted stakeholders include the community, state and local government, rescue and rehabilitation groups, fishers, land owners, tourism operators, recreational boaters	Proportion of survey respondents demonstrating awareness	DPI-F (Initiative 8 lead) - Community  DPE-EHG (Initiative 5 lead)	Coastal Residents Survey and Visitors Survey  Pre and Post workshop/event surveys to demonstrate increased understanding/information.	Irregularly and opportunistically (post-event), collated annually	

LI 10	Community members and targeted stakeholders demonstrate awareness of benefits of, and threats to, the marine estate	Improved community awareness of benefits, threats, and management arrangements relevant to the marine estate (8G)	<p>Indicator to be explored through the following questions:</p> <p>How much, if anything, would you say you know about each of the following benefits associated with the NSW coast?</p> <ul style="list-style-type: none"> <li>- Many types of marine animals and plants in NSW are unique to the southern half of Australia;</li> <li>- Spending time in natural environments has been linked to better health and overall wellbeing in humans; Nature-based tourism is important for the economy of regional areas of NSW;</li> <li>- Estuaries in NSW (e.g. coastal lakes, harbours) are important nursery areas for many species;</li> <li>- Recreational fishing provides wellbeing benefits (e.g. relaxation, social connection and exercise);</li> <li>- Commercial fishing and aquaculture in NSW provide the community with a source of seafood that is sustainably managed.;</li> <li>- For Aboriginal people, culture, nature, land and water are connected to each other;</li> <li>- Aboriginal cultural fishing is important for passing on cultural knowledge to younger generations</li> </ul> <p>And how much, if anything, would you say you know about each of the following threats associated with the NSW coast?</p> <ul style="list-style-type: none"> <li>- Most marine litter comes from land sources;</li> <li>- Marine litter can injure and kill wildlife through ingestion or entanglement;</li> <li>- Nutrients and sediments that are washed into drains and creeks can end up in waterways;</li> <li>- Stormwater and farmland runoff can affect the health and habitats of marine wildlife (e.g. seagrass);</li> <li>- Human activities cause estuaries (e.g. coastal lakes, harbours) to be the most impacted environments on the NSW</li> </ul>	Proportion of survey respondents reporting awareness	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey, Visitors Survey, Youth Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.
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KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
			coast; - Climate change is rated as a major threat to the benefits we receive from the NSW coast; - Human presence can impact wildlife (e.g. shore birds, whales) by causing them to move away from feeding, resting and breeding areas; - Harvesting or removing wildlife (e.g. fish, sea snails) can impact the way other people use and value the coast  Levels of awareness: Yes, fully aware of it, Yes, aware of it but not in detail, No, not aware of it					
LI 11	Responsible and related agencies report confidence to fulfil governance roles and responsibilities	Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)	Activities include: - Those relating to new approvals arrangements under 1.2, such as updated coastal floodplain drainage management or Coastal Floodplains Study information or Offsetting - Others TBC  Responsible and related agencies include: - Local Councils - Others TBC  Specific roles, responsibilities and accountabilities to be identified for development of survey.	Proportion of survey respondents reporting confidence	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	Agency staff survey  Targeted stakeholder survey (to target councils)	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 11	Responsible and related agencies report confidence to fulfil governance roles and responsibilities	Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)	<p>Activities include:</p> <ul style="list-style-type: none"> <li>- Those relating to new approvals arrangements under 1.2, such as updated coastal floodplain drainage management or Coastal Floodplains Study information or Offsetting</li> <li>- Others TBC</li> </ul> <p>Responsible and related agencies include:</p> <ul style="list-style-type: none"> <li>- Local Councils</li> <li>- Others TBC</li> </ul> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents reporting confidence	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
LI 11	Responsible and related agencies report confidence to fulfil governance roles and responsibilities	Improved access to, use, coordination and efficiency of frameworks, policies and processes by responsible agencies for managing water quality and litter (1L)	<p>Activities include:</p> <ul style="list-style-type: none"> <li>- Those relating to new approvals arrangements under 1.2, such as updated coastal floodplain drainage management or Coastal Floodplains Study information or Offsetting</li> <li>- Others TBC</li> </ul> <p>Responsible and related agencies include:</p> <ul style="list-style-type: none"> <li>- Local Councils</li> <li>- Others TBC</li> </ul> <p>Specific roles, responsibilities and accountabilities to be identified for development of survey.</p>	Proportion of survey respondents reporting confidence	Initiative lead(s), in conjunction with Agency Staff Survey Coordinator	<p>Agency staff survey</p> <p>Targeted stakeholder survey (to target councils)</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	
LI 11	Responsible agencies report confidence with capacity to fulfil governance roles and responsibilities	Greater clarity of roles, responsibilities and accountabilities and improved capacity to fulfil roles among all responsible agencies (9H)	<p>Regulatory processes and approvals such as:</p> <ul style="list-style-type: none"> <li>- Land use and development planning and approvals in coastal and foreshore zones</li> <li>- Crown land consent for work on crown land</li> <li>- Marine park permits</li> <li>- DPI s.37 permits</li> <li>- Commercial fishing approvals</li> <li>- Aquaculture</li> </ul>	<p>Proportion of survey respondents demonstrating confidence</p> <p>Number of activities/processes that demonstrate capacity to fulfil governance roles and responsibilities</p>	DPI-F (Initiative 9 lead). In conjunction with Agency Staff Survey Coordinator	<p>Responsible agencies staff survey</p> <p>Administrative data - findings from quarterly reporting, external assessments such as REAF report.</p>	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 12	Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	Improved adoption of best practice land management and compliance with rules and regulations for managing water pollution and litter (1D)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Water pollution and litter</li> </ul> <p>Specific rules, regulations and guidelines include:</p> <ul style="list-style-type: none"> <li>- For water quality - Conditions of development consent;</li> <li>- Poor work practices that may affect WQ – from 1.2.13 and Ag Programs;</li> <li>- Fisheries permit conditions</li> <li>- Best practice approaches for diffuse source water pollution to be developed through MEMS</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Ag industries</li> <li>- Construction industry</li> <li>- Landholders / participants in on-ground works;</li> <li>- Councils</li> </ul>	<p>Total litter fines issued in NSW</p> <p>Proportion of noncompliant stakeholders audited through the Fish Friendly Local Council Program</p> <p>Proportion of building sites identified as noncompliant with runoff regulations</p> <p>Proportion of permit breaches by councils or developers for sediment, fish passage or harm marine vegetation permits</p>	<p>DPE-EHG (Initiative 1A lead and EPA (litter))</p> <p>DPI-F Initiative 1B lead</p> <p>DPE-EHG (Initiative 1A lead)</p> <p>DPI-F Initiative 1B lead</p>	<p>Litter fine data – EPA</p> <p>Fish Friendly Local Council Program audit records</p> <p>TBC</p> <p>Compliance records of infringements</p>	<p>Annual</p> <p>Documented opportunistically as audits are completed, collated annually</p>	
LI 12	Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	Improved compliance with regulations to protect threatened and protected species (5E)	<p>Activities include those relating to threatened and protected species under the BC Act and threatened species under the FM Act.</p> <p>Specific rules, regulations and guidelines include those relating to:</p> <ul style="list-style-type: none"> <li>- Approach distances to marine mammals.</li> <li>- Gear</li> <li>- Restricted areas</li> </ul> <p>Targeted stakeholders include:</p> <p>Commercial wildlife watching tourism operators, fishers, recreational boaters, general members of the public</p>	<p>Proportion of recreational boaters demonstrating understanding of rules relating to distances and disturbances to threatened and protected species</p> <p>Number of fishers caught in restricted or protected areas (for threatened or protected species)</p> <p>Rate of non-compliance with regulations for threatened and protected species (Proportion of non-compliant stakeholders per capita)</p> <p>Proportion of compliant whale and dolphin watching operators per compliance operation</p>	<p>DPE-EHG (Initiative 5 lead)</p>	<p>Survey - recreational boaters at boat show</p> <p>Targeted place based pre and post management intervention response (e.g., new signs pre and post)</p> <p>Commercial operators audit results</p> <p>Commercial operators audit results</p>	<p>Irregularly and opportunistically (post-event), collated annually</p> <p>Ongoing, collated annually</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 12	Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	Increased compliance with and support for guidelines and regulations for safe and sustainable boating (7B)	<p>Activities include those relating to safe and responsible boating</p> <p>Specific rules, regulations and guidelines include:</p> <ul style="list-style-type: none"> <li>- Boating safety guidelines</li> <li>- Boating rules</li> <li>- Licence / registration conditions</li> <li>- Safety equipment</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- General boaters</li> </ul>	Boating Safety Compliance Rate	Initiative 7 Lead (TfNSW)	TfNSW Boating Safety Officer reports	Ongoing and collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 12	Non-compliance among the community and targeted stakeholders with rules, regulations, guidelines and their responsibilities for undertaking activities related to the marine estate	Increased landholder, community and business compliance with rules and regulations for activities that have the potential to impact upon the marine estate (9F)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Land use and management</li> <li>- Water pollution and litter</li> <li>- Marine pests</li> <li>- Recreational and commercial fishing</li> <li>- Safe and sustainable boating</li> <li>- Threatened and protected species</li> </ul> <p>Specific rules, regulations and guidelines include:</p> <ul style="list-style-type: none"> <li>- Fisheries Management Act</li> <li>- MEM Act</li> <li>- POEO Act</li> <li>- TfNSW</li> <li>- DPE-EHG</li> <li>- DPE-P</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- TBC by initiative lead(s)</li> </ul>	Proportion of noncompliant stakeholders per capita	<p>DPE-EHG (water pollution);</p> <p>EPA (litter);</p> <p>DPI Fisheries (permits);</p> <p>DPI (land use &amp; management);</p> <p>DPE-EHG (threatened and protected species);</p> <p>DPI (fishing);</p> <p>TfNSW (boating);</p> <p>DPI (land use &amp; management);</p> <p>DPI (marine pests, fishing, aquaculture);</p> <p>DPI (Landholders &amp; business)</p>	<p>Administrative data;</p> <p>Litter fine data – EPA;</p> <p>Fisheries compliance records of infringements;</p> <p>Initiative lead(s) to note if they have any other existing processes for monitoring non-compliance:</p> <p>- i9 to liaise with compliance team to assess complexities of non-compliance data and provide appropriate commentary.</p>	Biennial	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 13	Aboriginal group or individual participation in Sea Country management, planning and monitoring	Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)	Includes participation in relation to: - representation on marine estate advisory committees - direct employment with responsible and related agencies in roles relating to the marine estate - Sea Country ranger programs - Aboriginal Advisory Groups related to the marine estate - MOUs in relation to the marine estate - events, activities or programs run by Initiative 4 including elders olympics, knockout.	Number of Aboriginal representatives on marine estate advisory committees  Number of Aboriginal Advisory Groups related to the marine estate  Number of Aboriginal participants in events, activities or programs involving Initiative 4  Number of marine fauna responses that include Aboriginal representatives	DPI-F (Initiative 4 lead)  Initiative 5 lead, in conjunction with Initiative 4 lead	Administrative data	Annual	Requires coordination with Initiative 5 to engage Aboriginal representatives in marine fauna responses
LI 13	Aboriginal group or individual participation in Sea Country management, planning and monitoring	Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	Includes participation in relation to: - representation on marine estate advisory committees - direct employment with responsible and related agencies in roles relating to the marine estate - Sea Country ranger programs - Aboriginal Advisory Groups related to the marine estate - MOUs in relation to the marine estate - events, activities or programs run by Initiative 4 including elders olympics, knockout.	Number of Aboriginal representatives on marine estate advisory committees  Number of Aboriginal Advisory Groups related to the marine estate  Number of Aboriginal participants in events, activities or programs involving Initiative 4  Number of marine fauna responses that include Aboriginal representatives	DPI-F (Initiative 4 lead)  Initiative 5 lead, in conjunction with Initiative 4 lead	Administrative data	Annual	Requires coordination with Initiative 5 to engage Aboriginal representatives in marine fauna responses
LI 13	Aboriginal group or individual participation in Sea Country management, planning and monitoring	Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)		Extent of coastline with cultural protocols developed and in effect for marine strandings  Number of marine mammal strandings responses that include Aboriginal representatives  Number of trainings in mammal stranding responses of Traditional Owners or Aboriginal people	DPE-EHG (Initiative 5 lead)	Administrative data	Irregularly and opportunistically (post-event), collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 14	Number of Sea Country areas under management agreements	Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)	Agreements include: - Memorandums of Understanding (MOUs) - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans (LMPs)	Number of land/water areas covered by management agreements	DPI-F (Initiative 4 lead)	Administrative data	Annual	
LI 14	Number of Sea Country areas under management agreements	Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	Agreements include: - Memorandums of Understanding (MOUs) - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans (LMPs)	Number of land/water areas covered by management agreements	DPI-F (Initiative 4 lead)	Administrative data	Annual	
LI 14	Number of Sea Country areas under management agreements	Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)	Agreements include: - Memorandums of Understanding (MOUs) - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans (LMPs)	Number of land/water areas covered by management agreements	DPI-F (Initiative 4 lead)	Administrative data	Annual	
LI 15	Aboriginal participants satisfaction with events, activities or programs for involvement in Sea Country management, planning and monitoring	Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	Measurement of this indicator will focus on those involved in programs or activities directly arising from the initiative.	Average satisfaction rating based on Likert scale	DPI-F (Initiative 4 lead)	Post event/activity participant feedback survey	Irregularly and opportunistically (post-event), collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 16	Number of programs or agreements initiated by Aboriginal groups or individuals for managing Sea Country	Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)	Programs, projects or agreements include: - Memorandums of Understanding (MOUs) - Sea Country ranger programs - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans - Funded project briefs	Number of programs or agreements initiated	DPI-F (Initiative 4 lead)	Administrative data	Annual	
LI 16	Number of programs or agreements initiated by Aboriginal groups or individuals for managing Sea Country	Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)	Programs, projects or agreements include: - Memorandums of Understanding (MOUs) - Sea Country ranger programs - Land and Sea Country Plans - Service Level Agreements - CRUA (Cultural Resource Use Agreements) - Local Management Plans	Number of programs or agreements initiated	DPI-F (Initiative 4 lead)	Administrative data	Annual	
LI 17	Responsible and related agencies recognise and demonstrate understanding of Aboriginal cultural values, roles and responsibilities in managing Sea Country	Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)	Includes: - Areas of responsibilities and geographic regions - Native title status - MOUs  Related agencies include: - LLS, DPE Water, Crown Lands, EPA, NRAR, Heritage NSW, Local governments	Proportion of survey respondents demonstrating clarity	DPI-F (Initiative 4 lead)  Agency Staff Survey Coordinator	Agency staff survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 18	Compliance with conditions in aquaculture permits and consents, and commercial and recreational fishing regulations	Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices (6B)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Commercial fishing and aquaculture,</li> <li>- Recreational fishing.</li> </ul> <p>Specific rules, regulations, guidelines and best practice approaches include:</p> <ul style="list-style-type: none"> <li>- Aquaculture permits and consents</li> <li>- Commercial fishing regulations</li> <li>- Recreational fishing regulations</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Recreational fishers</li> <li>- Commercial fishers</li> <li>- Aquaculturalists</li> </ul>	<p>% Compliance during inspections on:</p> <ul style="list-style-type: none"> <li>- recreational fishers</li> <li>- Commercial fishers</li> <li>- Aquaculturalists</li> </ul> <p>% support for enforceable arrangements from commercial fishers (collected during inspections)</p>	DPI-F (Initiative 6 lead) in conjunction w/ Fisheries Compliance Unit	Fisheries compliance records of infringements	Annual	The data is filtered for spatial extent of the NSW marine estate.
LI 19	Number of new maritime infrastructure projects delivering new or upgraded infrastructure to support improved waterways access	Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values. (7E)	Measure of the number of projects delivered under the Boating Now infrastructure grants program	Number and value of projects delivered per annum under the Boating Now Program.	Initiative 7 Lead (TfNSW)	Boating Now program administrative data	Annual	
LI 20	Targeted stakeholders report attitudes and awareness that align with safe and sustainable boating practices	Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)	Measure boater's attitudes towards sustainable boating practices as part of the annual boater survey. Filter survey respondents based on stakeholder groups through questionnaire i.e., commercial, recreational etc.	<p>Proportion of survey respondents reporting awareness of and use of appropriate attitudes and behaviours.</p> <p>Number of positive interactions through social media with content relating to safe and sustainable boating practices.</p> <p>Number of downloads of additional information relating to safe and sustainable boating practices via QR codes on printed materials and signs.</p>	Initiative 7 Lead (TfNSW)	<p>Annual Boater Surveys (Recreational Boating Behaviour Report), (Boating Participation Survey)</p> <p>Administrative data from social media management</p>	<p>Annual</p> <p>Measured irregularly, collated annually</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 20	Targeted stakeholders report awareness of, and attitudes that align with, safe and sustainable boating practices	Greater community, government and industry awareness and understanding of guidelines and regulations for safe and sustainable boating (7D)	<p>Measure boater's attitudes towards sustainable boating practices as part of the annual boater survey. Responses may be analysed and reported based on stakeholder groups.</p> <p>List of social media activities which constitute engagement:</p> <ul style="list-style-type: none"> <li>- Positive likes/reactions, comments or shares of relevant content</li> <li>- Downloads</li> <li>- QR codes</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Recreational boaters</li> <li>- Commercial boaters</li> <li>- General community through social media</li> </ul>	<p>Proportion of survey respondents reporting awareness of and use of appropriate attitudes and behaviours.</p> <p>Number of positive interactions through social media with content relating to safe and sustainable boating practices.</p> <p>Number of downloads of additional information relating to safe and sustainable boating practices via QR codes on printed materials and signs.</p>	Initiative 7 Lead (TfNSW)	<p>Annual Boater Surveys (Recreational Boating Behaviour Report), (Boating Participation Survey)</p> <p>Administrative data from social media management</p>	Annual Measured irregularly, collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 21	Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)	<p>Survey questions to be developed in conjunction with the Stakeholder Survey Coordinator.</p> <p>Relevant best practice land management, rules and regulations include those in relation to:</p> <ul style="list-style-type: none"> <li>- Diffuse Source Water Pollution Strategy</li> <li>- Oyster Reef Restoration Implementation Guidelines</li> <li>- Fertiliser management</li> <li>- Blueberry nutrition guidelines</li> <li>- Macadamia nut nutrient replacement</li> <li>- Farm water and nutrient management</li> <li>- Coastal wetland rehabilitation</li> <li>- Risk-based framework</li> <li>- NSW Water Quality Objectives</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Councils</li> <li>- Key agricultural stakeholders (i.e. blueberry and macadamia farmers, oyster, other)</li> <li>- recreational fishers</li> <li>- agronomists</li> <li>- general community</li> </ul>	<p>Proportion of survey respondents reporting awareness and clarity of relevant best practice land management, rules and regulations</p> <p>Number of participants in workshops, webinars, eLearning or other relevant education events who report improved understanding of relevant best practice land management, rules and regulations</p>	<p>Initiative lead(s), in conjunction with:</p> <ul style="list-style-type: none"> <li>- DPI-F (Initiative 8 lead)</li> <li>- Community Stakeholder Survey Coordinator</li> </ul> <p>Initiative lead(s), or nominated delegate(s)</p>	<p>Coastal Residents Survey and Visitors Survey</p> <p>Targeted stakeholder survey.</p> <p>Event-based surveys</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes).</p> <p>Documented opportunistically as events and surveys completed, collated annually</p>	<p>Pre- and post-event surveys target stakeholders on a project level.</p>

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 21	Targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Improved understanding of environmental, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (2I)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- land use and management</li> </ul> <p>Specific rules, regulations, guidelines and best practice approaches include:</p> <ul style="list-style-type: none"> <li>- Floodplain drainage works approvals</li> <li>- Foreshore development approvals</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Foreshore landowners</li> <li>- Cane Industry</li> <li>- Coastal Councils</li> <li>- Drainage Unions</li> <li>- Other floodplain landholders and industries</li> </ul>	<p>Proportion of survey respondents reporting awareness and clarity</p> <p>Number of stakeholders with access to new tools such as online mapping and comprehensive summaries of approval pathways that streamline approval responsibilities</p>	<p>DPI-F (Initiative 2 lead)</p> <p>Stakeholder Survey Coordinator</p>	<p>Post-training survey or other follow-up discussions (formal or informal).</p> <p>Targeted stakeholder survey.</p> <p>Post-training survey or other follow-up discussions (formal or informal).</p> <p>Program management (administrative) data</p> <p>Application of mapping and documented tools when undertaking assessments and approvals</p>	<p>Irregularly and opportunistically (post-event), collated annually.</p> <p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Documented opportunistically as instances of adoption are identified, collated annually</p>	
LI 21	Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)	<p>Activities include those relating to:</p> <ul style="list-style-type: none"> <li>- Threatened and protected species</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Local councils</li> <li>- State government agencies</li> </ul>	<p>Proportion of survey respondents demonstrating clarity (%)</p> <p>Proportion of survey respondents reporting increased clarity of roles, responsibilities and accountabilities (%)</p>	DPE-EHG (Initiative 5 lead)	<p>Post event surveys/review - scope to iterate these over time after attempting to implement after actions reviews to elicit these metrics</p> <p>After-action surveys/reviews</p>	<p>Irregularly and opportunistically (post-event), collated annually</p>	<p>Post workshop/event surveys capture changes understanding to capture change in public and industry understanding over time.</p> <p>After-action survey/review process captures information to inform indicator.</p>

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 21	Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Improved awareness and understanding among industry and the community of responsibilities and regulation relating to marine pest management (6C)	<p>Activities include those relating to: commercial fishing and aquaculture, recreational fishing.</p> <p>Specific rules, regulations, guidelines and best practice approaches include:</p> <ul style="list-style-type: none"> <li>- Biosecurity Plan</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Boat owners berthed within marine estate waters e.g., fishing charter, recreational boating, sailing, racing, etc</li> <li>- Commercial fishers / industry</li> <li>- Recreational fishers / industry</li> <li>- Aquaculture industry</li> <li>- Community</li> </ul>	Proportion of survey respondents reporting awareness and clarity (%)	<p>Agency Staff Survey Coordinator</p> <p>DPI-F (Initiative 6 lead) in conjunction w/ Biosecurity</p>	<p>Targeted stakeholder survey (Agency Staff Survey Coordinator)</p> <p>The Monitoring and Evaluation follow-up survey to Marine Biosecurity Awareness Project.</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	<p>Rec fishers reporting unlawful catch (i.e., exceeding bag limits or threatened and protected species) through the RFMP do not have an understanding or knowledge that their actions were unlawful / unethical</p> <p>Rec fishers reporting through the RLHS that indicate support for rec fish trust funds to be used for enforcement have an understanding and appreciation of rules / regs and best practice</p>

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 21	Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices (6F)	<p>Activities include those relating to: commercial fishing, aquaculture, and recreational fishing.</p> <p>Specific rules, regulations, guidelines and best practice approaches include:  - best practice for responsible fishing (e.g., through live streams and other social media education campaigns)</p> <p>Targeted stakeholders include:  - Industry stakeholders (commercial fishers and aquaculture ventures)  - Recreational fishers  - Boat Owners</p>	<p>Proportion of survey respondents reporting awareness and clarity (%)</p> <p>Additional measures relating to understanding of threats and benefits of fishing will be further refined as data collection processes are developed. These will may be identified from:</p> <p>RFMP phone-diary survey - % of events where rec fishers exceeded bag limit , retention of protected species</p> <p>Rec fish licence fee survey (RLHS) - informal survey of licence holders on their satisfaction of enhancement programs, (i.e. % believe enforcement of fishing rules should be done)</p> <p>Response to questions on compliance and understanding of rules from commercial fishing socio-economic surveys (i.e. % agree they have understanding)</p> <p>% Good understanding of rules (by commercial fishers during compliance inspections)</p>	<p>DPI-F (Initiative 8 lead) - Community</p> <p>Targeted Stakeholder Survey Coordinator</p> <p>DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit, and DPI-F Compliance</p>	<p>Coastal Residents Survey and Visitors Survey</p> <p>Targeted stakeholder survey</p> <p>Recreational licence holders survey (RLHS)</p> <p>New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishing)</p> <p>DPI-F Compliance inspections - Compliance Unit database</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)</p> <p>Biennial</p> <p>RLHS is done every 3 years. Next one is due in 2021/22</p> <p>Annual from 2021-23 (stage 3 funding requested to continue through 2028)</p>	<p>Rec fishers reporting unlawful catch (i.e., exceeding bag limits or threatened and protected species) through the RFMP do not have an understanding or knowledge that their actions were unlawful / unethical</p> <p>Rec fishers reporting through the RLHS that indicate support for rec fish trust funds to be used for enforcement have an understanding and appreciation of rules / regs and best practice</p>

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 21	Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Increased community awareness of safe and sustainable use of the marine estate (8E)	<p>Indicator to be explored through the following question: How well do you feel you understand the following rules and regulations related to the NSW coast?</p> <ul style="list-style-type: none"> <li>- Disposal of different types of rubbish;</li> <li>- Stormwater best management;</li> <li>- Approaching marine wildlife (e.g. seals, dolphins, and whales) on foot, boat, or in the water);</li> <li>- Recreational fishing;</li> <li>- Recreational boating including use of paddle crafts (e.g. motor cruising, sailing, PWC, kayaking)</li> </ul> <p>Levels of awareness/clarity: Very well, Fairly well, Not very well, Have heard of, but know nothing about them, Never heard about them</p>	Proportion of survey respondents reporting awareness and clarity (%)	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.
LI 21	Community and targeted stakeholders report awareness and clarity of rules, regulations, guidelines, best practice and their responsibilities for undertaking activities related to the marine estate	Greater community awareness of their responsibilities and opportunities to participate in management of the marine estate (8F)	<p>Indicator to be explored through the following question: How well do you feel you understand the following rules and regulations related to the NSW coast?</p> <ul style="list-style-type: none"> <li>- Disposal of different types of rubbish;</li> <li>- Stormwater best management;</li> <li>- Approaching marine wildlife (e.g. seals, dolphins, and whales) on foot, boat, or in the water);</li> <li>- Recreational fishing;</li> <li>- Recreational boating including use of paddle crafts (e.g. motor cruising, sailing, PWC, kayaking)</li> </ul> <p>Levels of awareness/clarity: Very well, Fairly well, Not very well, Have heard of, but know nothing about them, Never heard about them</p> <p>Targeted groups include: Community</p>	Proportion of survey respondents reporting awareness and clarity (%)	DPI-F (Initiative 8 lead) - Community	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 22	Community and stakeholder participation in management of the marine estate including, filling knowledge gaps	Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)	Includes participation in activities relating to habitat modification, local Aboriginal community involvement in marine wildlife events, planning approvals.  Relevant codes of practice include: TBC  Relevant citizen science programs include those that relate to management and conservation of threatened and protected species  Stakeholders include Aboriginal communities, land owners, community, industry, state and local government	Number of signatories to codes of practice  Number of industry participants in gear trials  Number of fishers than participate in observer based surveys (volunteer based)  Number of agency-funded relevant citizen science programs  Number of registered volunteers participating in wildlife rescues  Number of agencies contributing to Elements database	DPE-EHG (Initiative 5 lead)	Administrative data (compliance, Elements)  Documentation from compliance operations	Ongoing, collated annually	
LI 22	Community and stakeholder participation in decision-making and management of the marine estate	Greater community awareness of their responsibilities and opportunities to participate in management of the marine estate (8F)	Includes decision-making and management activities relating to: - number of people that responded to surveys (Coastal residents and visitors, youth, Aboriginal peoples) - number of surveys conducted - number of people engaged in community surveys  Targeted groups include: Community, coastal Aboriginal communities	Number of community members responding to survey  Number of surveys conducted	DPI-F (Initiative 8 lead)	Administrative data	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Information relating to Indicator and Measure is documented through administrative processes
LI 22	Community and stakeholder participation in decision-making and management of the marine estate	Increased community participation in decision-making and management of the marine estate (9E)	Includes decision-making and management activities relating to: - MEMS stages / projects - Marine parks  Stakeholders include: - Community - Participants in the advisory committees.	Number of community and stakeholder participants in decision-making processes  Number of participants in and frequency of engagement through marine park advisory committees	DPI-F (Initiative 9 lead)	Administrative data  Community surveys (marine park management plans)  Advisory committees administrative data	Annual	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 23	Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)	<p>Activities include those relating to: recreational fishing,</p> <p>Targeted stakeholders include:  - Recreational fishing licence holders  - Recreational fishing committees/representative groups</p>	<p>Proportion of survey respondents reporting enhanced opportunities and experiences (%)</p> <p>Proportion of recreational fishing survey respondents reporting satisfaction with fishing activity (%)</p> <p>Additional measures may be identified from the Rec fish licence fee survey (RLHS) - informal survey of licence holders on their satisfaction of enhancement programs, this is normally trust based (i.e. % satisfaction with enhancement programs /opportunities, angler access etc.)</p>	<p>Stakeholder survey coordinator</p> <p>DPI-F (Initiative 6 lead) in conjunction with DPI Fisheries and Aquaculture Management Unit</p> <p>DPI-F (Initiative 6 lead) in conjunction with DPI Fisheries and Aquaculture Management Unit</p>	<p>Targeted stakeholder survey (coordinated by Agency Staff Survey Coordinator)</p> <p>Rec Fishing Monitoring Program (RFMP) phone-diary 'Washup Survey'</p> <p>Recreational licence holders survey (RLHS)</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)</p> <p>Biennial</p> <p>RLHS is done every 3 years. Next one is due in 2021/22</p>	
LI 23	Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)	<p>Activities include those relating to: commercial fishing and aquaculture,</p> <p>Targeted stakeholders include:  - Industry stakeholders (commercial fishers, seafood businesses, and aquaculture ventures)</p>	<p>Proportion of survey respondents reporting enhanced opportunities and experiences (%)</p> <p>Additional measures from aquaculture production (economic) reports to show steady or increasing farm gate value</p> <p>aquaculture team has requested Stage 3 funds for further economic valuation data to indicate steady or increasing value to the community/state/nation</p> <p>Potential additional measures to be identified from socio-economic surveys currently underway for commercial fishing (i.e. % survey respondents reporting satisfaction with commercial fishing activities)</p>	<p>Agency Staff Survey Coordinator</p> <p>DPI-F (Initiative 6 lead) in conjunction with DPI Fisheries and Aquaculture Management Unit</p>	<p>Targeted stakeholder survey (coordinated by Agency Staff Survey Coordinator)</p> <p>Aquaculture Production Reports</p> <p>Aquaculture Stage 3 economic valuation analysis</p> <p>New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishing)</p>	<p>Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)</p> <p>Annual production reports;</p> <p>Stage 3 economic valuation would be biennial</p> <p>Commercial - annual from 2021-23 (stage 3 funding requested to continue through 2028)</p>	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 23	Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	Enhanced opportunities and experiences for Aboriginal cultural fishing practices (6I)	<p>Activities include those relating to: cultural fishing,</p> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- Aboriginal communities/committees/representative groups</li> </ul>	Proportion of survey respondents reporting enhanced opportunities and experiences (%)			Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	
LI 23	Community and targeted stakeholders report enhanced opportunities and experiences for activities relating to marine estate	Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)	<p>Activities include those relating to commercial and recreational boating, and reflect services and experiences such as:</p> <ul style="list-style-type: none"> <li>- boat ramps</li> <li>- other boating infrastructure</li> <li>- access</li> <li>- crowding</li> </ul> <p>Targeted stakeholders include:</p> <ul style="list-style-type: none"> <li>- recreational boaters</li> <li>- commercial boaters</li> <li>- community</li> </ul>	<p>Proportion of survey respondents reporting enhanced opportunities and experiences</p> <p>Proportion of survey respondents reporting satisfaction with different marine estate services</p> <p>Number of social media posts or comments reporting positive experiences with boating in the marine estate.</p>	Initiative 7 Lead (TfNSW)	<p>Targeted stakeholder survey</p> <p>Boating Now Survey</p> <p>Recreational Boating Participation survey</p>	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 24	Community members report awareness and clarity of agencies' respective roles and responsibilities in managing the marine estate	Improved community awareness of benefits, threats, and management arrangements relevant to the marine estate (8G)	<p>Indicator to be explored through the following questions:</p> <p>Which, if any, of the following NSW government agencies or authorities that manage the NSW coast are you aware of? Please select all that apply.</p> <ul style="list-style-type: none"> <li>- DPI Fisheries</li> <li>- Crown Lands</li> <li>- Local Land Services</li> <li>- DPE-EHG</li> <li>- DPE-P</li> <li>- TfNSW</li> <li>- None of the above</li> <li>- Don't know / Not sure</li> </ul> <p>To the best of your knowledge, what do you think [SHOW IF SELECTED MORE THAN ONE AGENCY: these agencies are] [SHOW IF SELECTED ONE AGENCY: this agency is] responsible for managing?</p> <ul style="list-style-type: none"> <li>- Fisheries and aquaculture</li> <li>- Water quality and litter</li> <li>- Marine mammals, birds &amp; reptiles</li> <li>- Land-use planning, major developments &amp; infrastructure</li> <li>- Boating, maritime safety and ports, including infrastructure</li> <li>- Marine park and aquatic reserve management</li> <li>- Land management and native title support</li> <li>- Deliver services to farmers to support sustainable land management</li> </ul>	Proportion of survey respondents reporting awareness and clarity (%)	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (aligning with evaluation timeframes)	Self-assessment is an accurate reflection of awareness, social acceptability bias is not driving response by survey participants.

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 24	Community members report awareness and clarity of agencies' respective roles and responsibilities in managing the marine estate	Greater community awareness of governance arrangements and opportunities to participate in management of the marine estate (9J)		Proportion of survey respondents reporting awareness and clarity	DPI-F (Initiative 8 lead)	Coastal Residents Survey and Visitors Survey	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)	
LI 25	Responsible agencies and targeted stakeholders demonstrate awareness of benefits of, and threat to, the marine estate	Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing on the marine estate (6E)	Includes threats and benefits relating to fishing and aquaculture.  Targeted stakeholders include: - Industry stakeholders (commercial fishers, aquaculturalists) - Recreational fishers	Proportion of survey respondents demonstrating awareness of impacts (%)  Additional measures relating to understanding of threats and benefits of fishing may be identified from:  Rec fish licence fee survey (RLHS) - informal survey of licence holders on their satisfaction of enhancement programs, (i.e. % believe enforcement of fishing rules should be done)  Response to questions on understanding/capacity building from commercial fishing socio-economic surveys (i.e. % agree they have sufficient training and advice about good fishing practices)  Environmental Assessment and Recreational Fishing Management Strategy evaluation and monitoring program** <sup>5</sup>	Agency Staff Survey Coordinator  DPI-F (Initiative 6 lead) in conjunction w/ Fisheries and Aquaculture Management Unit	Agency Staff Survey  Recreational licence holders survey (RLHS)  New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishing)  Environmental Assessment and Recreational Fishing Management Strategy evaluation and monitoring program** is Stage 3 dependent	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)  RLHS is done every 3 years. Next one is due in 2021/22  Annual from 2021-23 (stage 3 funding requested to continue through 2028)  Annual if funded in Stage 3	Rec fishers reporting through the RLHS that indicate support for rec fish trust funds to be used for enforcement have an understanding of impacts of recreational fishing

<sup>5\*\*</sup> Assumption that stage 3 funding is obtained for evaluation and monitoring.

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 26	Community and stakeholder satisfaction with experience participating in the management of the marine estate	Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)		Proportion of participants reporting willingness to participate again in the future (%)	DPI-F (Initiative 5 lead);  Stakeholder survey coordinator	Post event/activity participant survey, documented in administrative data;	Irregularly and opportunistically (post-event), collated annually	Willingness to participate again is an indication of satisfaction with the experience. Survey may also ask reasons for why / why not to clarify.
LI 26	Community and stakeholder satisfaction with experience participating in decision-making and management of the marine estate	Increased community participation in decision-making and management of the marine estate (9E)	Includes decision-making and management activities relating to: - MEMS stages / projects - Marine parks  Stakeholders include: - Community - Participants in the advisory committees.	Average satisfaction rating based on Likert scale	DPI-F (Initiative 9 lead)	Post event/activity participant survey, documented in administrative data.  Advisory committee survey - organised by action lead	Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)  Surveys post event/activity – frequency varies (minimum three over the life of the MEMS)  Data collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 27	Community members report awareness and appreciation of the benefits and significance of commercial and recreational fishing and aquaculture	Improved understanding and appreciation among community and other stakeholder groups of the benefits of commercial and recreational fishing and aquaculture (6D)	Stakeholder survey questions for LI 10 will also ask about awareness of benefits of commercial and recreational fishing and aquaculture. For example, recreational fishers will be asked about their awareness of the benefits associated with commercial fishing, etc.	Proportion of survey participants reporting awareness and appreciation of benefits and significance (%)  Additional measures relating to appreciation and understanding of benefits of fishing and aquaculture may be identified New South Wales Fisheries Economic and Social Indicator Monitoring (commercial fishers) (i.e., importance of fishing to survey participants) (in progress)	DPI-F (Initiative 8 lead) - Community Stakeholder survey coordinator	Coastal Residents Survey and Visitor Survey Targeted stakeholder survey New South Wales Fisheries Economic and Social Indicator Monitoring (BDO survey commercial fishing)	Biennial (ideally), or minimum of three (3) surveys over the life of the MEMS (to collect baseline data, progress at mid-point, end-of-strategy achievement)  Biennial  Commercial – annual from 2021-23 (stage 3 funding requested to continue through 2028)	
LI 28	Area of coastal landscape managed for habitat or to reduce diffuse source water pollution	Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)	The indicator measures the areas directly improved from MEMS on-ground actions only.  Types of habitats include all water dependent ecosystems in coastal catchments draining to marine estate, e.g., Riparian vegetation, ground water dependent ecosystems (surface and sub-surface), Key Fish Habitat, wetlands	Length of waterways managed for habitat or to reduce water pollution (km)  Area managed for habitat or to reduce diffuse source water pollution (ha)  Area of farmland under management practices to improve water quality outcomes (ha)	DPI-F (Initiative 1B lead) in conjunction with delivery partner leads  DPI-F (Initiative 1B lead) in conjunction with delivery partner leads  DPI-F (Initiative 1B lead) in conjunction with delivery partner leads (DPI Ag Research)	Program management (administrative) data.	Documented opportunistically as works completed, collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 29	Responsible agencies, related agencies and targeted stakeholders proactively and effectively contribute to Elements system for managing threatened and protected species	Improved interagency coordination and management of threatened and protected species (5H)		Number of agencies contributing data and records to Elements database (# per year)  Proportion of new data records that meet quality standards (% per year)	DPE-EHG (Initiative 5 lead)	Administrative data (Elements)	Ongoing collection, collated annually	Number of agencies contributing reflects right organisations participating in wildlife event.  Contribution of quality data reflects effectiveness of response.  Data is reviewed for quality.
LI 29	Responsible agencies, related agencies and targeted stakeholders proactively and effectively contribute to Elements system for managing threatened and protected species	Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result (5I)		Number of agencies contributing data and records to Elements database (# per year)  Proportion of new data records that meet quality standards (% per year)	DPE-EHG (Initiative 5 lead)	Administrative data (Elements)	Ongoing collection, collated annually	Number of agencies contributing reflects right organisations participating in wildlife event.  Contribution of quality data reflects effectiveness of response.  Data is reviewed for quality.
LI 30	Improved capacity for Aboriginal people to participate in Sea Country Management	Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)	Capacity may be fostered through programs and training relating to: - General boating licenses - Weed and marine debris management - Elders mentoring programs - Deckhand and Coxswain courses - Education programs - Tourism Course - any others applicable	Number of capacity building courses and training opportunities offered for Aboriginal people  Number of Aboriginal people completing relevant training and certifications  Newly trained/certified Aboriginal people report that the course or training has helped them feel better equipped to participate in relevant Sea Country management activities	DPI-F (Initiative 4 lead)	Administrative data  Post event/action surveys, testimonials, post training survey, post participation survey.	Annual  Surveys post event/activity – Irregularly and opportunistically, collated annually	

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 31	Increased inclusion of Aboriginal people and cultural values in decision-making processes for the marine estate	Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)	<p>Includes decision-making processes in relation to the delivery of the MEMS and other government programs that relate to the marine estate.</p> <p>Aboriginal representatives refers to the relevant local Aboriginal groups, and may include LALCs, Aboriginal corporations, Elder groups, Land Councils and prescribed Body Corporates under native title act in design and delivery</p>	<p>Number of Aboriginal people employed in middle to upper management roles within responsible and related agencies in relation to the marine estate</p> <p>Number of strategies, plans and programs developed and implemented by responsible agencies in relation to the marine estate with appropriate inclusion of Aboriginal representatives and cultural values</p> <p>Proportion of respondents reporting satisfaction with inclusion of Aboriginal people and cultural values in decision-making processes</p>	DPI-F (Initiative 4 lead)  Stakeholder Survey Coordinator	<p>NSW public service employment data</p> <p>Administrative data</p> <p>Targeted stakeholder survey / post-process survey</p>	<p>Annual</p> <p>Irregularly and opportunistically (post-process), collated annually</p> <p>Biennial (ideally), or minimum of three (3) over the life of the MEMS (aligning with evaluation timeframes)</p> <p>Surveys post event/activity – Irregularly and opportunistically, collated annually</p>	<p>Staff are willing to self-identify as being Aboriginal.</p> <p>Measure can be reported without breaching privacy.</p> <p>Strategy, plan or program leaders document Aboriginal engagement process, including how outcomes from that process are reflected in the final deliverable.</p>
LI 32	Responsible agencies demonstrate improved processes and capacity to respond to wildlife incidents	Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result (5I)	About improved capacity, response, timeliness and adoption of recommendations into improved processes from events.	Proportion of recommendations from after-action reviews implemented in incident response process	DPE-EHG (Initiative 5 lead)	After-action surveys/reviews	Irregularly and opportunistically (post-event), collated annually	<p>After-action survey/review process captures information to inform indicator.</p> <p>After-action reviews continue to be conducted following all significant wildlife incidents.</p> <p>Survey/review participants self-assessment is a suitable reflection.</p>

KPI/LI code	KPI/LI	Outcome	Indicator specifications	Measure and unit	Indicator lead (coordination)	Data source	Collection frequency	Assumptions
LI 33	Optimal animal welfare results following a wildlife incident involving a threatened or protected species	Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result (5I)	About demonstrating improved animal welfare outcomes	Proportion of respondents to after-action surveys reporting that optimal animal welfare was achieved	DPE-EHG (Initiative 5 lead)	After-action surveys/reviews	Irregularly and opportunistically (post-event), collated annually	After-action survey/review process captures information to inform indicator. After-action reviews continue to be conducted following all significant wildlife incidents. Survey/review participants self-assessment is a suitable reflection.

# Appendix B – Data collection and management plan

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Data will be collected, collated and analysed as part of monitoring and evaluation activities. Detailed data requirements for individual monitoring indicators are provided in Appendix A, and are broadly discussed below.

## Data collection and sources for monitoring management action status

Program managers, and initiative and management action leads will collect and document data relating to the status of inputs, management actions and outputs under each initiative to provide snapshots on program delivery. This will draw on project management data that is collected and reported for the individual management actions quarterly and annually through the MEMS governance and project management framework. Status reports based on a traffic light system will report on progress of each management action, initiative and ultimately the MEMS program through three tiers of governance against key project management parameters of scope, schedule, budget, issues and risk. This will ensure that the MEMS is implemented consistently and effectively across the entire program.

## Data collection and sources for monitoring indicators

Data requirements, collection, sources and collection frequency for each indicator are provided in the indicator tables in Appendix A. Monitoring draws on existing data collection processes where possible, however new data collection processes are being established for a range of indicators. The frequency for data collection varies by indicator to ensure data collection is practical and provides meaningful insights into trends and risks. Indicator leads have been assigned accountability for ensuring data is collected according to requirements (quality and timeliness). Indicator leads may delegate responsibility for data collection or collation.

There are common data collection processes across a number of indicators and initiatives. These include several surveys that will be used to collect data across multiple initiatives, as outlined in Section 4.2.2. The surveys will be undertaken in a coordinated manner using the minimum number of survey processes. For example, data for many indicators is being collected through the community survey (Coastal Residents Survey and Visitors Survey) and the Agency Staff Survey. These surveys have been designed based on the targeted survey participants to elicit responses that contribute to measuring multiple indicator measures.

Similarly, there are indicators that are relevant for more than one initiative. In some cases, an indicator may have some data requirements specific to a particular initiative. Where applicable, these requirements are specified in Appendix A and will be the responsibility of the indicator lead for that initiative.

An overview of the main data sources is provided below.

## Existing data sources

Monitoring of indicators draws on existing data sources and collection processes wherever possible. Existing data sources include environmental monitoring programs, the Threat and Risk Assessment (TARA), stakeholder attitudes and behaviour surveys relating to specific existing programs, tourism data, employment data and compliance data. Existing data may be collected by agencies responsible for managing the marine estate, or by external agencies, such as the Australian Bureau of Statistic (ABS).

## Administrative data

Administrative data includes data collected by responsible agencies as part of their internal systems for tracking and reporting. This includes but is not limited to project/program management documentation; expenditure; customer service activities; internal and external compliance activities; policy development, planning and other processes. Many of these systems will already exist, although some may be reviewed to further support the MIMP.

## Community, Sea Country, targeted stakeholder, and responsible and related agency staff surveys

Many indicators require data to be collected through survey questions of relevant stakeholders and program partners. It is intended that data collection through this method is coordinated across all relevant management initiatives and indicators, such that data is collected through the minimum number of surveys. The main surveys that have been designed for this purpose are the:

- Coastal Residents Survey,
- Visitors Survey,
- Sea Country (marine estate) survey,
- Responsible and related agency survey (agency staff survey), and
- Targeted stakeholder surveys

The survey designers will consider the most efficient approach to undertake each survey.

## Data collection

Data collection will be undertaken through surveys of randomly selected individuals from within identified stakeholder categories. Stakeholder and partner categories are:

- Responsible and related agencies, including marine estate managers from relevant government departments, agencies and statutory authorities; local government; and researchers.
- Targeted stakeholders (engaged community), community interest groups, industry and peak bodies, conservation groups, and avid users of the marine estate.
- Program partners including Traditional Owners and the Aboriginal community
- General community, capturing the broader public, who may have some limited interaction with or interest in the marine estate, but have the potential to become more engaged in the future.

Where appropriate, specific stakeholder sub-categories are identified for individual indicators in Appendix A. As well as specifying the relevant program partners, and responsible and related agencies.

### Collection frequency

Surveys will be undertaken a minimum of three (3) times over the life of the MEMS in alignment with evaluation processes (see Section 4.3.2) at the following stages:

- in the initial stage to collect baseline data
- mid-way through the MEMS to check progress
- near the end of the life of the MEMS to assess end-of-strategy achievement.

### Data analysis

A Likert scale will be used to capture survey respondents' agreement, awareness or satisfaction. An example of a Likert scale to assess satisfaction is provided below (Table 38).

Average ratings will be derived for each measure and indicator. Responsible agencies and survey coordinators may also choose to interrogate data in other ways, such as by stakeholder category.

Table 38 Likert scale to be used in surveys to assess satisfaction

Rating	Description
1	Very unsatisfied
2	Unsatisfied
3	Neither satisfied nor unsatisfied
4	Satisfied
5	Very Satisfied

The survey coordinators, in collaboration with indicator leads, may choose to include additional questions with an alternative response format to probe responses or gather more specific insights. For example, this could include testing survey respondents' familiarity with specific to guidelines or roles and responsibilities. This would contribute to an overall proportion of survey respondents who are able to demonstrate familiarity with the specified guidelines or governance arrangements.

## Data collection and sources for evaluation

Data for the evaluation will be gathered through the following methods:

- Literature review
- Targeted interviews with stakeholders
- Interviews with relevant experts
- Collating and reviewing administrative data
- Data collected through monitoring of indicators.

Data requirements, collection and sources for each KEQ are provided in Table 7.

Table 39 Data requirements, collection and sources for evaluation questions

Evaluation question	Data requirements	Data collection and source(s)
<b>Context and basis</b>		
What was the rationale and intent of the initiative?	Documented evidence of rationale and intent of the MEMS	Literature review: <ul style="list-style-type: none"> <li>• NSW Marine Estate Management Strategy 2018-2028</li> </ul>
How has the policy context changed since the initiative was developed?  <i>Consider:</i> <ul style="list-style-type: none"> <li>• <i>Policy and management context</i></li> <li>• <i>Community expectations</i></li> </ul>	Documentation of relevant changes to policy context	Literature review: <ul style="list-style-type: none"> <li>• Legislation</li> <li>• Any revised MEMS documentation</li> </ul> Interviews with marine and coastal science experts and managers
How has understanding of marine estate environments and issues evolved since the initiative commenced?	Documentation of relevant changes to body of knowledge	
<b>Process evaluation</b>		
Were management actions completed and outputs achieved, within budget, scope and timeframes?  Why or why not?  <i>Consider:</i> <ul style="list-style-type: none"> <li>• <i>Were budget, scope and timeframes appropriate for the intended management actions and outputs?</i></li> <li>• <i>Are management actions and outputs still considered the right areas for investment?</i></li> <li>• <i>What could be done differently?</i></li> </ul>	Program delivery monitoring data relating to: <ul style="list-style-type: none"> <li>• Documentation of management actions and outputs achieved or progressed</li> <li>• Budget and delivery timeframe reporting for management actions and outputs</li> <li>• Documentation of scope changes for management actions and outputs, where relevant</li> </ul>	Program delivery monitoring data  Responsible agency staff interviews  Administrative data from responsible agencies

Evaluation question	Data requirements	Data collection and source(s)
<ul style="list-style-type: none"> <li>• <i>Has implementation been influenced by external factors?</i></li> <li>• <i>To what extent have completed management actions and outputs contributed towards outcomes?</i></li> </ul>	Qualitative insights from stakeholders in relation to sub-questions	
<p>Was implementation constrained in any way by inputs? Why or why not?</p> <p>Consider:</p> <ul style="list-style-type: none"> <li>• <i>Funding</i></li> <li>• <i>Resources</i></li> <li>• <i>Involvement of stakeholders</i></li> <li>• <i>Partnerships or agreements</i></li> </ul>	<p>Responsible agency staff reflections on whether inputs were a constraint in achieving outcomes</p> <p>Qualitative insights from stakeholders in relation to sub-questions</p>	<p>Responsible agency staff interviews</p> <p>Administrative data from responsible agencies</p>
<b>Outcome evaluation</b>		
<p>To what extent have outcomes been achieved? Why / why not?</p> <p>Consider:</p> <ul style="list-style-type: none"> <li>• <i>What trends have been identified through indicators?</i></li> <li>• <i>Were management actions/outputs targeted effectively towards achieving outcomes?</i></li> <li>• <i>Was achievement of outcomes influenced by external factors?</i></li> </ul>	<p>Responsible agency staff reflections on achievement of outcomes</p> <p>Qualitative insights from stakeholders in relation to sub-questions</p> <p>Trends in KPIs and LIs over time</p>	<p>Responsible agency staff interviews</p> <p>Targeted stakeholder interviews</p> <p>Indicator monitoring data (see Appendix A)</p>
<p>Has the initiative produced any positive or negative unintended or unexpected outcomes? Why/why not?</p> <p>Consider (for example):</p>	<p>Responsible agency staff reflections on unintended or unexpected outcomes</p> <p>Qualitative insights from stakeholders</p> <p>Trends in KPIs and LIs over time</p>	<p>Responsible agency staff interviews</p> <p>Targeted stakeholder interviews</p> <p>Stakeholder interviews</p>

Evaluation question	Data requirements	Data collection and source(s)
<ul style="list-style-type: none"> <li>• <i>Community and cultural: safety, access, relationships and interactions, employment, attitudes and behaviour, physical and mental health</i></li> <li>• <i>Economic: industry structure, industry expansion/contraction, business/industry practices, goods/services prices</i></li> <li>• <i>Environment: species population growth/decline, species/individual health and safety, greenhouse gas emissions, soil/water/air pollution, ecosystem disruption</i></li> <li>• <i>Responsible agencies: administrative burden, indicator fixation, restricted focus, misinterpretation, gaming the system</i></li> </ul>		
<p>Are outcomes and indicators appropriate to the identified need? Why/why not?</p> <p>Consider:</p> <ul style="list-style-type: none"> <li>• <i>Were outcomes and indicators effectively aligned with the original identified need?</i></li> <li>• <i>Are outcomes and indicators still relevant given any changes in the broader context?</i></li> <li>• <i>Do / did indicators provide sufficient and appropriate signal for progress towards outcomes and/or any emerging risks?</i></li> <li>• <i>Is / was data collection against indicators achievable?</i></li> </ul>	<p>Responsible agency staff reflections on appropriateness of outcomes</p> <p>Responsible agency staff reflections on appropriateness of indicators</p> <p>Qualitative insights from stakeholders in relation to sub-questions</p>	<p>Responsible agency staff interviews</p> <p>Stakeholder interviews</p>
<p>What insights are there for ensuring achieved outcomes are maintained in the future?</p> <p>Consider:</p>	<p>Responsible agency staff reflections on maintaining outcomes</p> <p>Qualitative insights from stakeholders in relation to sub-questions</p>	<p>Responsible agency staff interviews</p> <p>Stakeholder interviews</p>

Evaluation question	Data requirements	Data collection and source(s)
<ul style="list-style-type: none"> <li>• <i>Are impacts likely to endure through subsequent planning timeframes?</i></li> <li>• <i>How should management responsibilities be assigned?</i></li> </ul>		
<b>Economic evaluation</b>		
<p>Have outcomes been achieved efficiently? Why/why not? Consider:</p> <ul style="list-style-type: none"> <li>• <i>What were the initiative's implementation costs?</i></li> <li>• <i>What are, or were, the initiative's expected, or achieved, net benefits in monetary terms? (Note: a cost-benefit analysis (CBA) is required to answer this question. Undertaking CBA for a program of this scale would be a significant task and should be carefully considered.)</i></li> <li>• <i>What are the key drivers of costs/benefits?</i></li> <li>• <i>How do the costs compare with other programs targeting the same need or issue?</i></li> <li>• <i>Could similar or greater benefits have been achieved through different actions?</i></li> <li>• <i>What is, or was, the most effective approach?</i></li> <li>• <i>Can resources be allocated more efficiently?</i></li> <li>• <i>Is the return on expenditure adequate to justify ongoing investment in the program?</i></li> </ul>	<p>MEMS implementation costs Non-market values Budget and delivery timeframe reporting for management actions and outputs Responsible agency staff reflections on efficiency of outcome delivery Qualitative insights from stakeholders in relation to sub-questions</p>	<p>Relevant information and data from stakeholders to understand nature and scale of change for quantification in monetary terms Program delivery monitoring data Monitoring data for economic and community benefits indicators Responsible agency staff interviews Administrative data from responsible agencies</p>

## Data management

Accurate and reliable data and information sources and collection processes are essential for monitoring and evaluation. Good data management is underpinned by clear and robust standards and processes for collecting, recording, storing and backing-up data; and cleaning, modifying, and analysing data. It also includes consideration of issues relating to privacy and ethics.

Data management arrangements will be established to ensure data and information collected for the MIMP is managed in a secure, structured and consistent manner. It will also support appropriate sharing and re-use of data and information by MEMA and MEMS partner agencies. Data management arrangements will be developed in accordance with guidance provided in relevant NSW and Commonwealth policies and frameworks, as outlined in this section.

### NSW Information Management Framework

Agencies responsible for collecting data and information through the MIMP will comply with the policies, guidelines and standards outlined in the overarching NSW [Information Management Framework](#) (IMF) (NSW Department of Finance, Services and Innovation, 2018). The IMF establishes a common approach to managing government data and information consistently across the NSW public sector.

Agencies should adopt an approach to data and information management that is consistent with the principles outlined in the [Information Management: a common approach](#) policy (Table 40). The policy outlines seven principles that NSW agencies are encouraged to implement as business-as-usual data and information management practices (NSW Department of Finance, Services and Innovation, 2013):

Table 40 NSW Information Management principles

Principle	Description
Governed	Data shall be governed: <ul style="list-style-type: none"><li>• as assets of strategic, operational and administrative value to NSW Government agencies</li><li>• in a manner that is transparent and accountable to NSW citizens and organisations.</li></ul>
Collected	Data shall be collected: <ul style="list-style-type: none"><li>• to document or facilitate delivery of services and the functions of NSW Government agencies</li><li>• with respect for the privacy of NSW citizens and the confidentiality of NSW organisations</li><li>• once, according to agreed standards that support relevance, accuracy and consistency so they are fit for purpose reliable, and can be, where appropriate, re-used by NSW Government agencies to improve service delivery or management reporting</li></ul>
Organised	Data shall be: <ul style="list-style-type: none"><li>• described and linked to related data or information, so they are easy for NSW Government agencies to search, retrieve, use and compare</li><li>• identified and integrated into systems that allow NSW Government agencies to routinely track and manage them according to their value.</li></ul>

Principle	Description
Secured	Data shall be secured: <ul style="list-style-type: none"> <li>• against unauthorised access, alteration, loss or deletion, to ensure their integrity and ongoing value to NSW Government agencies</li> <li>• using controlled and auditable processes that demonstrate to NSW citizens and organisation the protection of sensitive data and information.</li> </ul>
Used	Data shall be used: <ul style="list-style-type: none"> <li>• to support planning, decision making, resource allocation, reporting, communications and transactions by NSW Government agencies</li> <li>• processed and analysed by NSW Government agencies to develop evidence-based policy and deliver targeted services to NSW citizens and organisations</li> <li>• and re-used, so NSW Government agencies derive maximum benefit from their investment in these assets.</li> </ul>
Shared	Data shall be shared: <ul style="list-style-type: none"> <li>• with respect for the privacy of NSW citizens and the confidentiality of NSW organisations</li> <li>• with other NSW Government agencies to reduce duplication of effort, streamline service delivery and provide a consolidated view of customer needs or public sector performance</li> <li>• published and made available for discovery, where appropriate, by NSW citizens and organisations, providing opportunities to communicate, consult and collaborate or to engage in value-added processing, analysis and development.</li> </ul>
Maintained	Data shall be maintained: <ul style="list-style-type: none"> <li>• using cost-effective, risk-based measures that facilitate business continuity for NSW Government agencies</li> <li>• to ensure their availability and reliability, for as long as they support service delivery and accountability by NSW Government agencies; and then systematically destroyed when their use and value has ceased, to minimise the costs and risks to NSW Government agencies of over-retention</li> <li>• or systematically archived to protect the enduring rights and interests of NSW citizens and organisations.</li> </ul>

Source: NSW Department of Finance, Services and Innovation 2013.

## Making data available to the NSW public

Open data is an important resource that can provide significant value to members of the public, industry, and government. Access to the data and information captured through evaluation and monitoring activities will adhere to the NSW Government's Open Data Policy, a subsidiary policy the IMF. The [Open Data Policy](#) directs NSW government agencies to proactively make data publicly available, ensure it is made safe for public release and to engage with stakeholders.

The policy focuses on datasets as an aspect of information defined in the Government Information (Public Access) Act 2009 (NSW) (GIPA Act) (NSW Department of Finance, Services and Innovation,

2016). A dataset, as defined by the policy, is an 'identifiable collection of government held information or data' (NSW Department of Finance, Services and Innovation, 2016).

The policy outlines six open data principles and associated responsibilities for managing open data. These are summarised below (Table 41).

Table 41 Open data principles

Principle	Description
Open by default, protected where required	Agencies will start from a position of data openness, favouring the release of data, unless there is an overriding public interest against disclosure GIPA Act.
Prioritised, discoverable and usable	High-value datasets will be prioritised for release. Data will be in a format that makes it easy to use, transform and reuse. When procuring or upgrading systems agencies will consider the use of technologies that enable data to be consumed by other systems. Metadata allows datasets to be found, understood, controlled and managed.
Primary and timely	Data will be released as collected at the source, with a high level of granularity, and not in aggregate or modified forms unless required to safeguard confidential or personal data.
Well managed, trusted and authoritative	Users will be alerted to the quality and limitations of the data to ensure confidence that it is trustworthy and authoritative. Data governance arrangements will be established and maintained in accordance with NSW Government's information management principles and the Data and Information Custodianship Policy.
Free where appropriate	Access to open data will be free by default.
Subject to public input	Agencies will engage with and are informed by the community, research sector and industry on the design of new datasets and data portals, and in deciding what data to publish and about publication practices.

Source: NSW Department of Finance, Services and Innovation, 2016.

### Other relevant policies, guidelines and processes

In addition to the IMP and Open Data Policy, responsible agencies will also give consideration to the policies outlined below () when undertaking data collection and sharing through the MIMP. for collecting data and information through the MIMP.

Table 42 Other relevant data management policies

Policy	Description
<p>NSW Data and Information Custodianship Policy, 2013</p>	<p>The <a href="#">NSW Data and Information Custodianship Policy</a> (NSW Department of Finance, Services and Innovation, 2013) defines a set of principles for the management and maintenance of NSW's core data and information assets in line with the NSW IMF.</p> <p>The policy directs the development, implementation and management of data and information custodianship roles and responsibilities, and the formal arrangements that create those roles and responsibilities for the NSW public sector.</p> <p>The policy promotes a clear understanding and acceptance of data and information custodianship responsibilities in order to maximise the benefits and minimise the costs associated with information management.</p>
<p>NSW Government Information Classification, Handling and Labelling Guidelines, 2015</p>	<p>The <a href="#">NSW Government Information Classification, Handling and Labelling Guidelines</a> (NSW Department of Finance, Services and Innovation, 2015) help agencies to identify the confidentiality requirements of their information assets and apply suitable protective markings in a manner consistent with the Australian Government security classification system.</p> <p>The Guidelines apply to the classification, labelling and handling of sensitive information in any format. It is intended that the guidelines will inform agency-specific information classification and handling policy and guidance for use by non-information management professionals.</p>
<p>NSW Government processes for requesting data and responding to requests for data</p>	<p>NSW Government processes for requesting data and responding to requests for data from other NSW agencies and the general public are outlined on the <a href="#">digital.nsw website</a> (NSW Department of Finance, Services and Innovation, 2016).</p> <p>It sets out <a href="#">four main steps</a> that should be followed by public sector staff who would like to access data from another NSW Government agency:</p> <ul style="list-style-type: none"> <li>• know your purpose</li> <li>• check whether data is already available</li> <li>• outline the specific types of data that are required</li> <li>• request data.</li> </ul> <p>There are also <a href="#">three key steps</a> to follow when responding to data requests from another NSW Government agency or the public:</p> <ul style="list-style-type: none"> <li>• assess whether the data can be shared safely</li> <li>• negotiate how to provide data</li> <li>• determine whether the data or aspects of it can also be made publicly available.</li> </ul>

Policy	Description
Guidelines for Ethical Research in Australian Indigenous Studies, 2012	<p>The Australian Institute of Aboriginal and Torres Strait Islander Studies' (AIATSIS) <a href="#">Guidelines for Ethical Research in Australian Indigenous Studies</a> (GERAIS) (AIATSIS, 2017) provides guidance for meaningful and ethical engagement and research involving Aboriginal and Torres Strait Islander peoples.</p> <p>The Guidelines comprise 14 principles that agency staff should follow., These are grouped under the broad categories of:</p> <ul style="list-style-type: none"> <li>• rights, respect and recognition</li> <li>• negotiation, consultation, agreement and mutual understanding</li> <li>• participation, collaboration and partnership</li> <li>• benefits, outcomes and giving back</li> <li>• managing research: use, storage and access</li> <li>• reporting and compliance.</li> </ul>
Access and Use Policy for the AIATSIS Collection	<p>The <a href="#">Access and Use Policy for the AIATSIS</a> (AIATSIS) sets out the conditions under which materials in the AIATSIS can be accessed and used. It has a particular focus on unpublished research materials.</p> <p>It includes an overview of the AIATSIS Collection and outlines measures governing access and use and negotiating access and use of the AIATSIS Collection.</p>

# Appendix C – Alignment of outcomes and benefits

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The MEMS business case (NSW Department of Primary Industries, 2018) identified a number of benefits across six types of stakeholder categories that can be expected to be delivered through implementation of the strategy initiatives. These categories are:

- Communities
- Aboriginal people
- Landowners: rural and urban
- Fisheries and aquaculturalists
- Tourists and tourist operators
- Boat users

The benefits are mixed in terms of likely timeframes, alignment with management initiatives, and whether they reflect an outcome or an output. As such, they were considered in development of the outcomes articulated in the program logics but the alignment between outcomes and benefits may be characterised by one of the following relationships:

- outcome(s) directly align with or capture the benefit
- outcome(s) contribute towards achieving the benefit
- outcome(s) may result from the identified benefit.

Benefits were considered in the context of their stakeholder category and the outcomes mapped to reflect the focus of the category. The benefits and their aligned outcomes are provided by stakeholder category in the following sub-sections.

## Communities

The outcomes aligned with benefits for communities, as identified in the business case, are shown below.

BENEFIT	OUTCOMES
<b>Abundant and diverse marine life for current and future generations</b>	<p>Maintained or improved biodiversity and marine habitats (2B, 2C)</p> <p>Improved habitat connectivity in prioritised regions (2F)</p> <p>Reduced threats to threatened and protected marine species in NSW (5A)</p> <p>Increased NSW contribution to national conservation of targeted threatened and protected species (5B)</p> <p>Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)</p>
<b>Improved water quality, healthier habitats and less litter</b>	<p>Waterway health in the marine estate aligns with community values (1A)</p> <p>Reduction in input litter to the marine estate in alignment with community values (1B)</p> <p>Maintained or improved biodiversity and marine habitats (2B, 1C)</p> <p>Reduction in input pollutants to waterways at targeted sites within pilot areas (1H)</p> <p>Reduction in input litter in target regions (1I)</p> <p>Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)</p>
<b>Improved outcomes for threatened and protected species</b>	<p>Reduced threats to threatened and protected marine species in NSW (5A)</p> <p>Increased NSW contribution to national conservation of targeted threatened and protected species (5B)</p> <p>Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)</p> <p>Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)</p> <p>Improved capacity to respond effectively to wildlife incidents and with optimal animal welfare result (5I)</p>
<b>Improved commercial and recreational opportunities</b>	<p>Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)</p> <p>Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)</p> <p>Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)</p> <p>Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p> <p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p>

BENEFIT	OUTCOMES
<b>Increased consumer confidence in NSW seafood</b>	<p>Waterway health in the marine estate aligns with community values (1A)</p> <p>Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)</p> <p>Improved understanding and appreciation among community and other stakeholder groups of the benefits of commercial and recreational fishing and aquaculture (6D)</p> <p>Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best-practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices (6F)</p>
<b>Improved climate resilience</b>	<p>Improved capacity of coastal and marine managers and communities to anticipate climate impacts and identify adaptation pathways (3A)</p> <p>Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)</p> <p>Improved knowledge of the likely future impacts of climate change on environmental values related to key components of the marine estate (3C)</p> <p>Ongoing and likely effects of climate change on the marine estate are researched and monitored (3D)</p> <p>Reduced threats to threatened and protected marine species in NSW (5A)</p>
<b>Improved health and wellbeing from positive marine interactions</b>	<p>Increased opportunities for Aboriginal people to derive economic benefit from the NSW marine estate (4F)</p> <p>Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)</p> <p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p> <p>Improved information base on human dimensions of the marine estate relevant to management (8D)</p>
<b>Coordinated and inclusive approach to management</b>	<p>Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)</p> <p>Improved consistency, coordination and integration among responsible agencies (1F)</p> <p>Greater clarity of roles, responsibilities and accountabilities among all agencies responsible for water quality and litter management (1K)</p> <p>Improved access to, use, coordination and efficiency of frameworks, policies and processes by responsible agencies for managing water quality and litter (1L)</p> <p>Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)</p> <p>Improved clarity of roles and responsibilities for coastal and foreshore planning and management among targeted agencies, landholders and developers (2G)</p> <p>Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)</p> <p>Improved consistency, coordination and integration among responsible agencies (9C)</p>

BENEFIT	OUTCOMES
	Increased community participation in decision-making and management of the marine estate (9E)
<b>Improved communication and education</b>	<p>Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)</p> <p>Greater community awareness of the sources and effects of water pollution and litter on the marine estate (1M)</p> <p>Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)</p> <p>Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible and related agencies (2H)</p> <p>Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (2I)</p> <p>Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)</p> <p>Improved understanding and sharing of information across stakeholders of threats to threatened and protected species (5C)</p> <p>Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)</p> <p>Improved awareness and understanding among industry and the community of responsibilities and regulation relating to marine pest management (6C)</p> <p>Improved understanding and appreciation among community and other stakeholder groups of the benefits of commercial and recreational fishing and aquaculture (6D)</p> <p>Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing on the marine estate (6E)</p> <p>Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best-practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices (6F)</p> <p>Greater community, government and industry awareness and understanding of guidelines and regulations for safe and sustainable boating (7D)</p> <p>Increased community awareness of safe and sustainable use of the marine estate (8E)</p> <p>Greater community awareness of their responsibilities and opportunities to participate in management of the marine estate (8F)</p> <p>Improved community awareness of benefits, threats, and management arrangements relevant to the marine estate (8G)</p> <p>Greater community awareness of governance arrangements and opportunities to participate in management of the marine estate (9J)</p>

BENEFIT	OUTCOMES
Reduced conflict between marine users	Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C) Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)

## Aboriginal People

The outcomes aligned with benefits for Aboriginal people, as identified in the business case, are shown below.

BENEFIT	OUTCOMES
<b>Abundant and diverse marine life for current and future generations</b>	<p>Maintained or improved biodiversity and marine habitats (1C, 2B)</p> <p>Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)</p> <p>Improved habitat connectivity in prioritised regions (2F)</p> <p>Reduced threats to threatened and protected marine species in NSW (5A)</p> <p>Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)</p>
<b>Improved water quality, healthier habitats and less litter</b>	<p>Waterway health in the marine estate aligns with community values (1A)</p> <p>Reduction in input litter to the marine estate in alignment with community values (1B)</p> <p>Reduction in input litter in target regions (1I)</p> <p>Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)</p> <p>Maintained or improved biodiversity and marine habitats (2B, 2C)</p> <p>Reduced threats to Aboriginal cultural heritage and use in the marine estate (4B)</p>
<b>More participation in events effecting culturally significant species</b>	<p>Reduced threats to Aboriginal cultural heritage and use in the marine estate (4B)</p> <p>Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)</p> <p>Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)</p> <p>Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)</p>
<b>Co-management of Sea Country</b>	<p>Improved Aboriginal satisfaction with Sea Country management (4A)</p> <p>Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)</p> <p>Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)</p> <p>Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)</p> <p>Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)</p>
<b>Greater support for Aboriginal cultural fishing practices</b>	<p>Reduced threats to Aboriginal cultural heritage and use in the marine estate (4B)</p> <p>The broader NSW community has a greater appreciation of the significance of Sea Country for Aboriginal people (4D)</p> <p>Improved understanding among government agencies and the community of</p>

BENEFIT	OUTCOMES
	<p>Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)</p> <p>Improved understanding and appreciation among community and other stakeholder groups of the benefits of commercial and recreational fishing and aquaculture (6D)</p>
<b>Training and job opportunities</b>	<p>Aboriginal people derive greater economic benefit from the marine estate (4C)</p> <p>Increased opportunities for Aboriginal people to derive economic benefit from the NSW marine estate (4F)</p> <p>Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)</p>
<b>Enhanced opportunities to share cultural knowledge</b>	<p>The broader NSW community has a greater appreciation of the significance of Sea Country for Aboriginal people (4D)</p> <p>Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)</p> <p>Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)</p> <p>Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)</p>
<b>Improved health and wellbeing from positive marine interactions</b>	<p>Aboriginal people derive greater economic benefit from the marine estate (4C)</p> <p>Increased opportunities for Aboriginal people to derive economic benefit from the NSW marine estate (4F)</p> <p>Enhanced opportunities and experiences for Aboriginal cultural fishing practices (6I)</p> <p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p> <p>Improved information base on human dimensions of the marine estate relevant to management (8D)</p>
<b>Coordinated and inclusive approach to management</b>	<p>Improved Aboriginal satisfaction with Sea Country management (4A)</p> <p>Improved incorporation of Aboriginal cultural values in decision-making processes for the marine estate (4E)</p> <p>Improved Aboriginal participation in Sea Country management, planning and monitoring (4H)</p> <p>Increased opportunities and capacity for Aboriginal participation in Sea Country management, planning and monitoring (4I)</p> <p>Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)</p>
<b>Research and monitoring to inform adaptive management</b>	<p>Improved understanding among government agencies and the community of Aboriginal cultural values, and roles and responsibilities in managing Sea Country and the marine estate (4G)</p> <p>Improved information base on human dimensions of the marine estate relevant to management (8D)</p>

BENEFIT	OUTCOMES
	Improved knowledge sharing and communication among responsible agencies (9D)

## Landowners: Rural and Urban

The outcomes aligned with benefits for landowners (rural and urban), as identified in the business case, are shown below.

BENEFIT	OUTCOMES
<b>Clearer guidelines and better land use management</b>	<p>Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)</p> <p>Improved design and management of foreshore and coastal land use and development, balancing social and economic benefits of development with enhanced coastal and marine habitat (2A)</p> <p>Improved simplicity, efficiency and clarity of processes for land use and development planning and approvals in coastal and foreshore zones (2D)</p> <p>Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (2I)</p> <p>Simpler and clearer regulatory processes and roles for agencies and communities (9G)</p>
<b>Reduced loss of topsoil and erosion events</b>	<p>Improved adoption of best practice land management and compliance with rules and regulations for managing water pollution and litter (1D)</p> <p>Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)</p> <p>Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)</p> <p>Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)</p> <p>Increased area of coastal landscape managed for biodiversity, habitat or to reduce diffuse source water pollution (1J)</p> <p>Increased adoption of best practice design and management of foreshore and coastal planning, development and use (2E)</p>
<b>Clearer guidelines on appropriate location for development and access infrastructure</b>	<p>Improved design and management of foreshore and coastal land use and development, balancing social and economic benefits of development with enhanced coastal and marine habitat (2A)</p> <p>Improved simplicity, efficiency and clarity of processes for land use and development planning and approvals in coastal and foreshore zones (2D)</p> <p>Increased adoption of best practice design and management of foreshore and coastal planning, development and use (2E)</p> <p>Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (2I)</p> <p>Increased landholder, community and business compliance with rules and regulations for activities that have the potential to impact upon the marine estate (9F)</p>

BENEFIT	OUTCOMES
<b>Better support to implement best management practices</b>	<p>Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)</p> <p>Improved simplicity, efficiency and clarity of processes for land use and development planning and approvals in coastal and foreshore zones (2D)</p> <p>Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (2I)</p> <p>Increased community awareness of safe and sustainable use of the marine estate (8E)</p>
<b>Reduced red tape in permits and administration</b>	<p>Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)</p> <p>Improved simplicity, efficiency and clarity of processes for land use and development planning and approvals in coastal and foreshore zones (2D)</p> <p>Improved efficiency and effectiveness in managing the marine estate (9B)</p> <p>Simpler and clearer regulatory processes and roles for agencies and communities (9G)</p>
<b>Better climate change support tools and guidance</b>	<p>Improved capacity of coastal and marine managers and communities to anticipate climate impacts and identify adaptation pathways (3A)</p> <p>Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)</p> <p>Ongoing and likely effects of climate change on the marine estate are researched and monitored (3D)</p>
<b>Improved communication and education</b>	<p>Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)</p> <p>Greater community awareness of the sources and effects of water pollution and litter on the marine estate (1M)</p> <p>Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)</p> <p>Improved community awareness of benefits, threats, and management arrangements relevant to the marine estate (8G)</p>
<b>Coordinated and inclusive approach to management</b>	<p>Frameworks, policies and processes for managing water quality are increasingly embedded in agencies' business-as-usual operations (1E)</p> <p>Greater clarity of roles, responsibilities and accountabilities among all agencies responsible for water quality and litter management (1K)</p> <p>Improved access to, use, coordination and efficiency of frameworks, policies and processes by responsible agencies for managing water quality and litter (1L)</p> <p>Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)</p> <p>Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)</p>

BENEFIT	OUTCOMES
	<p>Improved consistency, coordination and integration among responsible agencies (9C)</p> <p>Increased community participation in decision-making and management of the marine estate (9E)</p> <p>Greater clarity of roles, responsibilities and accountabilities and improved capacity to fulfil roles among all responsible agencies (9H)</p>
<p><b>Research and monitoring to inform adaptive management</b></p>	<p>Improved understanding among responsible agencies and targeted stakeholders of methods, associated effectiveness and benefit of investment for managing water quality and litter (1G)</p> <p>Improved understanding of current coastal and foreshore environments and land uses in prioritised regions among responsible and related agencies (2H)</p> <p>Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)</p> <p>Ongoing and likely effects of climate change on the marine estate are researched and monitored (3D)</p> <p>Improved information base on human dimensions of the marine estate relevant to management (8D)</p> <p>Improved knowledge sharing and communication among responsible agencies (9D)</p>
<p><b>Improved capacity building</b></p>	<p>Improved community and targeted stakeholder understanding of best practice land management, rules and regulations for managing water pollution and litter (1N)</p> <p>Increased adoption of best practice design and management of foreshore and coastal planning, development and use (2E)</p> <p>Improved understanding of environmentally, socially, culturally and economically appropriate land use and best practice design in coastal and foreshore zones among targeted agencies, landholders and developers (2I)</p> <p>Improved capacity of coastal and marine managers and communities to anticipate climate impacts and identify adaptation pathways (3A)</p>

## Fisheries and aquaculturalists

The outcomes aligned with benefits for fisheries and aquaculturalists, as identified in the business case, are shown below.

BENEFIT	OUTCOMES
<b>Improved water quality, healthier habitats and better fishing</b>	<p>Waterway health in the marine estate aligns with community values (1A)</p> <p>Maintained or improved biodiversity and marine habitats (1C, 2B)</p> <p>Reduction in input pollutants to waterways at targeted sites within pilot areas (1H)</p> <p>Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)</p> <p>Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)</p> <p>Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)</p>
<b>Reduced by-catch and interactions with threatened and protected species</b>	<p>Improved compliance with regulations to protect threatened and protected species (5E)</p> <p>Greater land owner, community, industry and Aboriginal participation in managing threatened and protected coastal and marine species (5F)</p> <p>Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)</p> <p>Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices (6B)</p>
<b>Reduced risk of marine pests and disease</b>	<p>Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices (6B)</p> <p>Improved awareness and understanding among industry and the community of responsibilities and regulation relating to marine pest management (6C)</p> <p>Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best-practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices (6F)</p>
<b>Reduced conflict with other users</b>	<p>Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices (6B)</p> <p>Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing on the marine estate (6E)</p> <p>Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)</p> <p>Increased community adoption of safe and sustainable use of the marine estate (8B)</p>

BENEFIT	OUTCOMES
<b>New aquaculture opportunities and business growth</b>	<p>Improved ecological sustainability, economic viability and community wellbeing relating to fishing and aquaculture in the marine estate (6A)</p> <p>Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)</p> <p>Increased community adoption of safe and sustainable use of the marine estate (8B)</p> <p>Social, cultural and economic values are better incorporated into planning and management of the marine estate (8C)</p>
<b>Transparent reporting and data sharing</b>	<p>Improved knowledge sharing and communication among responsible agencies (9D)</p> <p>Improved processes for knowledge sharing and communication among responsible agencies (9I)</p>
<b>Clearer rules and improved opportunities for self-compliance</b>	<p>Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices (6B)</p> <p>Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best-practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices (6F)</p> <p>Increased landholder, community and business compliance with rules and regulations for activities that have the potential to impact upon the marine estate (9F)</p>
<b>Greater social acceptance of fishing and industry</b>	<p>Improved understanding and appreciation among community and other stakeholder groups of the benefits of commercial and recreational fishing and aquaculture (6D)</p>
<b>Improved fishing opportunities through fisheries enhancements</b>	<p>Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)</p> <p>Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)</p> <p>Enhanced opportunities and experiences for Aboriginal cultural fishing practices (6I)</p>
<b>Research and monitoring to inform adaptive management</b>	<p>Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)</p> <p>Ongoing and likely effects of climate change on the marine estate are researched and monitored (3D)</p> <p>Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing on the marine estate (6E)</p> <p>Improved knowledge sharing and communication among responsible agencies (9D)</p>

## Tourists and tour operators

The outcomes aligned with benefits for tourists and tour operators, as identified in the business case, are shown below.

BENEFIT	OUTCOMES
<b>Abundant and diverse marine life for current and future generations</b>	<p>Maintained or improved biodiversity and marine habitats (1C, 2B)</p> <p>Reduced threats to threatened and protected marine species in NSW (5A)</p> <p>Increased NSW contribution to national conservation of targeted threatened and protected species (5B)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p>
<b>Better water quality and less litter</b>	<p>Waterway health in the marine estate aligns with community values (1A)</p> <p>Reduction in input litter to the marine estate in alignment with community values (1B)</p> <p>Reduction in input pollutants to waterways at targeted sites within pilot areas (1H)</p> <p>Reduction in input litter in target regions (1I)</p>
<b>Increased business activity and growth</b>	<p>Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate (7A)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p> <p>Increased community adoption of safe and sustainable use of the marine estate (8B)</p> <p>Social, cultural and economic values are better incorporated into planning and management of the marine estate (8C)</p>
<b>Reduced red tape in permits and administration</b>	<p>Maintained compliance with and improved support for rules, regulations and guidelines for sustainable recreational and commercial fishing and aquaculture practices (6B)</p> <p>Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)</p> <p>Improved efficiency and effectiveness in managing the marine estate (9B)</p> <p>Simpler and clearer regulatory processes and roles for agencies and communities (9G)</p>
<b>Improved fishing opportunities</b>	<p>Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)</p> <p>Enhanced opportunities for commercial fishing and marine aquaculture industries while balancing other social, cultural, economic and environmental values (6H)</p> <p>Enhanced opportunities and experiences for Aboriginal cultural fishing practices (6I)</p>

BENEFIT	OUTCOMES
<b>More tourist interest in marine estate</b>	<p>Improved understanding and appreciation among community and other stakeholder groups of the benefits of commercial and recreational fishing and aquaculture (6D)</p> <p>Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p> <p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p>
<b>Enhanced visitor education and awareness</b>	<p>Improved awareness and understanding among industry and the community of responsibilities and regulation relating to marine pest management (6C)</p> <p>Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing on the marine estate (6E)</p> <p>Improved awareness, understanding, experience and engagement among commercial and recreational fishers of best-practice guidelines, rules and regulations for ecologically sustainable fishing and aquaculture practices (6F)</p> <p>Greater community, government and industry awareness and understanding of guidelines and regulations for safe and sustainable boating (7D)</p>
<b>Enhanced marine eco-tourism opportunities</b>	<p>Enhanced opportunities and experiences for recreational fishers while balancing other social, cultural, economic and environmental values (6G)</p> <p>Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate (7A)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p> <p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p>
<b>Improved health and wellbeing from positive marine interactions</b>	<p>Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate (7A)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p> <p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p>
<b>Research and monitoring to inform adaptive management</b>	<p>Coastal and marine managers, and communities have improved access to and knowledge of the impacts of climate change on environmental, social, cultural and economic values of the marine estate (3B)</p> <p>Ongoing and likely effects of climate change on the marine estate are researched and monitored (3D)</p> <p>Increased NSW contribution to national conservation of targeted threatened</p>

BENEFIT	OUTCOMES
	<p>and protected species (5B)</p> <p>Improved understanding and sharing of information across stakeholders of threats to threatened and protected species (5C)</p> <p>Improved understanding among responsible agencies and commercial and recreational fishers of the impacts of fishing on the marine estate (6E)</p> <p>Improved information base on human dimensions of the marine estate relevant to management (8D)</p> <p>Improved knowledge sharing and communication among responsible agencies (9D)</p>

## Boat users

The outcomes aligned with benefits for boat users, as identified in the business case, are shown below.

BENEFIT	OUTCOMES
<b>Improved outcomes for threatened and protected species</b>	<p>Reduced threats to threatened and protected marine species in NSW (5A)</p> <p>Improved public and industry participant awareness of threats to biodiversity and their statutory and social responsibilities relating to threatened and protected species (5G)</p> <p>Increased compliance with and support for guidelines and regulations for safe and sustainable boating (7B)</p>
<b>Improved health and wellbeing from positive marine interactions</b>	<p>Boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate (7A)</p> <p>Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)</p> <p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p> <p>Improved information base on human dimensions of the marine estate relevant to management (8D)</p>
<b>Better mooring management</b>	<p>Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p>
<b>Reduced conflict with other users</b>	<p>Increased compliance with and support for guidelines and regulations for safe and sustainable boating (7B)</p> <p>Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)</p> <p>Increased community awareness of safe and sustainable use of the marine estate (8E)</p>
<b>Better boating access and waterway infrastructure</b>	<p>Improved or maintained social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW community (8A)</p> <p>Improved opportunities, experiences and appreciation for boating while balancing other social, cultural, economic and environmental values (7C)</p> <p>Improved boating and infrastructure programs for the benefit of coastal and marine habitats and species, and environmental, social, cultural and economic values (7E)</p>
<b>Improved boating behaviour</b>	<p>Increased compliance with and support for guidelines and regulations for safe and sustainable boating (7B)</p> <p>Greater community, government and industry awareness and understanding of guidelines and regulations for safe and sustainable boating (7D)</p>

BENEFIT	OUTCOMES
<b>Coordinated and inclusive approach to management</b>	<p>Improved coordination, consistency and efficiency in coastal and foreshore planning and management (2C)</p> <p>Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)</p> <p>Improved consistency, coordination and integration among responsible agencies (9C)</p> <p>Increased community participation in decision-making and management of the marine estate (9E)</p> <p>Greater clarity of roles, responsibilities and accountabilities and improved capacity to fulfil roles among all responsible agencies (9H)</p>
<b>Improved communication and education</b>	<p>Greater community, government and industry awareness and understanding of guidelines and regulations for safe and sustainable boating (7D)</p> <p>Increased community awareness of safe and sustainable use of the marine estate (8E)</p>
<b>Reduced red tape in permits and administration</b>	<p>Community, stakeholders and responsible and related agencies report satisfaction with governance of the marine estate (9A)</p> <p>Improved efficiency and effectiveness in managing the marine estate (9B)</p> <p>Simpler and clearer regulatory processes and roles for agencies and communities (9G)</p>
<b>Research and monitoring to inform adaptive management</b>	<p>Improved information base on human dimensions of the marine estate relevant to management (8D)</p> <p>Improved knowledge sharing and communication among responsible agencies (9D)</p>

## Appendix D – Framework contributors

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The following individuals were involved in developing the original Monitoring and Evaluation Framework.

Name	Organisation
Gary Allan	NSW Department of Primary Industries
Maryrose Antico	NSW Department of Primary Industries
Terry Bailey	Aither Senior Associate
Kate Barclay	Marine Estate Expert Knowledge Panel
Maksudul Bari	NSW Department of Primary Industries
Elissa Bishop	NSW Environment Protection Authority
Benjamin Black	NSW Department of Primary Industries
Phil Bolton	NSW Department of Primary Industries
Graeme Bowley	NSW Department of Primary Industries
Anthony Boxshall	Science Into Action
Shannon Brennon	Local Land Services
Kate Brooks	Marine Estate Expert Knowledge Panel
Sarah Chang	Office of Environment and Heritage
Rowan Chick	NSW Department of Primary Industries
Louisa Clark	Office of Environment and Heritage
Tonia Clarkson	NSW Department of Primary Industries
Melinda Coleman	NSW Department of Primary Industries
David Cordina	NSW Department of Primary Industries
Susan Crocetti	Office of Environment and Heritage
Isobel Cummings	Office of Environment and Heritage
Belinda Curley	NSW Department of Primary Industries
Fiona Curley	Office of Environment and Heritage
Naomy Dang	NSW Department of Primary Industries

Name	Organisation
Rebecca Darbyshire	NSW Department of Primary Industries
Lesley Diver	NSW Department of Primary Industries
Patrick Dwyer	NSW Department of Primary Industries
Madeleine Einsiedel	Transport for New South Wales
Sarah Fairfull	NSW Department of Primary Industries
Angus Ferguson	Office of Environment and Heritage
Michelle Fletcher	NSW Department of Primary Industries
Peter Gallagher	NSW Department of Primary Industries
Nicholas Giles	NSW Department of Primary Industries
William Glamore	Marine Estate Expert Knowledge Panel
Tim Glasby	NSW Department of Primary Industries
Natalie Gollan	NSW Department of Primary Industries
Neil Gremmell	Office of Environment and Heritage
Lauren Grima	Office of Environment and Heritage
Luke Jewell	NSW Department of Primary Industries
Daniel Johnson	NSW Department of Primary Industries
Emma Johnston	NSW Department of Primary Industries
Nicola Johnstone	NSW Department of Primary Industries
Alan Jordan	NSW Department of Primary Industries
Vesa Kanko	Office of Environment and Heritage
Geoff Lemessurier	Local Land Services
Michael Lowry	NSW Department of Primary Industries
Tim MacDonald	Office of Environment and Heritage
Peter McGinnity	Marine Estate Expert Knowledge Panel
Polly Mitchell	Office of Environment and Heritage
Shaun Morris	Local Land Services
Clare Murphy	Office of Environment and Heritage

Name	Organisation
Scott Nichols	NSW Department of Primary Industries
Claire Norris	NSW Department of Primary Industries
Sharon Owens	NSW Environment Protection Authority
Neil Patchett	Transport for New South Wales
Sam Pateman	NSW Department of Primary Industries
Marcus Riches	NSW Department of Primary Industries
David Rissik	WBM BMT
Kylie Russell	NSW Department of Primary Industries
Rupert Saville	NSW Environment Protection Authority
Peter Scanes	Office of Environment and Heritage
Danielle Spruyt	NSW Department of Primary Industries
Chris Stanley	NSW Department of Primary Industries
Peter Steinberg	Marine Estate Expert Knowledge Panel
Kate Thornborough	NSW Department of Primary Industries
John Stewart	NSW Department of Primary Industries
Simon Walsh	NSW Department of Primary Industries
Judith Webster	Transport for New South Wales
James Wraith	NSW Department of Primary Industries
Peter Wright	Office of Environment and Heritage
Aaron Wright	Office of Environment and Heritage

# Document History

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Revision no.	Author/s	Checked	Approved
04	Lawson Cole, Oliver Snow, Clare Ferguson	Clare Ferguson	Clare Ferguson
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## For information on this report:

<b>Please contact</b>	Clare Ferguson
<b>Mobile</b>	0427 117 315
<b>Email</b>	clare.ferguson@aither.com.au

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