



Lakes Entrance Integrated Water Management Plan

East Gippsland Integrated Water Management Forum

Acknowledgement of Country

East Gippsland Water and East Gippsland Shire Council acknowledge the Gunaikurnai people as the Traditional Custodians of the land and waters that make up the Lakes Entrance Integrated Water Management Plan area – including Lakes Entrance, Kalimna, Lake Tyers, Toorloo Arm, Lake Bunga and the surrounding Country.

We pay our respects to Gunaikurnai Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.

We recognise that water, including the Gippsland Lakes, rivers, wetlands and sea Country, holds deep cultural, spiritual and economic significance for Gunaikurnai people, and that caring for water is an integral part of caring for Country.

We are committed to working together to embed Gunaikurnai values, knowledge and priorities in integrated water management decisions, and to supporting ongoing, properly resourced Traditional Owner leadership in water planning and management.



Forward

On behalf of East Gippsland Water and East Gippsland Shire Council, we are pleased to present the Lakes Entrance Integrated Water Management Plan.

Lakes Entrance, Kalimna, Lake Tyers, Toorloo Arm and Lake Bunga are special places. Water shapes every aspect of life here, from the Gippsland Lakes and coastal wetlands to the fishing fleet and tourism economy, to the everyday amenity and liveability of our streets, parks and open spaces. For Traditional Owners, the Gunaikurnai people, water is central to culture, story, identity and the health of Country.

These communities are also on the frontline of change. A warming, drying climate, more intense storms, rising sea levels and gradual growth all place pressure on our water systems, our infrastructure and the environments and places we value. How we plan for and manage water in the coming decades will be critical to the region's liveability, resilience and prosperity.

This Plan responds to that challenge. It has been developed under Victoria's Integrated Water Management Framework and delivers on a key commitment in the East Gippsland Integrated Water Management Strategic Directions Statement. Rather than focusing on a single project or part of the system, it considers the whole water cycle – drinking water, wastewater, stormwater, waterways, groundwater and the coastal environment – and looks for integrated solutions that deliver multiple benefits.

The Lakes Entrance Integrated Water Management Plan:

- Describes the key water-related challenges for the townships and surrounding areas
- Sets out locally specific guiding principles that reflect community, environmental, cultural and economic values
- Summarises what we heard through three workshops and an online survey
- Identifies a long list of potential integrated water management opportunities and, from these, four key focus areas for further work.

These four focus areas – supporting Traditional Owner outcomes and water values, strengthening community education and engagement in integrated water management, understanding and managing stormwater, and developing alternative water opportunities – provide a clear framework for future investment and collaboration.

We are grateful to Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC), regional agencies, local organisations, businesses and community members who contributed their time, knowledge and ideas through the workshops and survey. Their input has been essential in shaping a Plan that reflects local priorities and builds on existing work in the region.

The Plan is a starting point, not an end point. Implementation will require ongoing partnership between East Gippsland Water, East Gippsland Shire Council, Traditional Owners, State agencies, regional organisations, industry and the community. As we learn from early projects and as climate, policy and local conditions evolve, the Plan will be reviewed and updated.

We look forward to working together to bring the initiatives in this Plan to life and to support a secure, liveable and resilient water future for Lakes Entrance and the surrounding communities.

Signed

Bec Hemming



Chair, IWM Forum

Executive summary

Executive Summary at a Glance

Why integrated water management?

Integrated water management looks at the whole water cycle – from rainfall, rivers and wetlands through to drinking water, wastewater and stormwater – as one connected system. Instead of managing each part in isolation, integrated water management seeks solutions that deal with several challenges at once, deliver broader benefits for communities, Country and the environment, and make better use of all available water sources, not just drinking water.

The challenge

The Lakes Entrance region is already experiencing the combined pressures of climate change, more frequent and intense storms, coastal inundation and population growth. A drier climate, rising sea levels, more extreme rainfall events and increasing impervious surfaces place pressure on drinking water supplies, stormwater and drainage systems, and the health of the Gippsland Lakes and Lake Tyers.

Our goals

1. Provide secure and sustainable water services.
2. Protect and enhance the health of receiving environments.
3. Support the liveability of the places we live and work.

Our focus areas

- Focus Area 1 – Supporting Traditional Owner outcomes and water values
- Focus Area 2 – Community education and engagement in integrated water management
- Focus Area 3 – Understanding and managing stormwater
- Focus Area 4 – Alternative water opportunities

Who is involved

East Gippsland Water and East Gippsland Shire Council are joint custodians of the Plan, working in partnership with Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC), East Gippsland Catchment Management Authority, DEECA, Gippsland Ports, Parks Victoria, local business and the community.

Timeframe

The Plan provides a framework for action over the short- to medium-term and medium- to long-term horizons, guiding future projects, partnerships and funding applications.

Integrated water management (IWM) planning in Victoria is guided by a state-wide framework. Strategic directions and priority initiatives are identified through regional Integrated Water Management Forums and captured in Strategic Directions Statements. The East Gippsland Strategic Directions Statement identifies the Lakes Entrance Integrated Water Management Plan as a current priority for the region.

This Plan covers Lakes Entrance and the surrounding communities of Kalimna, Lake Tyers, Toorloo Arm and Lake Bunga. It sets out locally relevant guiding principles that align with regional IWM objectives and it identifies opportunities to move from planning towards implementation. The Plan was developed by East Gippsland Water and East Gippsland Shire Council, working in partnership with State and regional organisations, Traditional Owners and community stakeholders.

Why integrated water management?

Integrated water management looks at the whole water cycle – from rainfall, rivers and wetlands through to drinking water, wastewater and stormwater – as one connected system. Instead of managing each part in isolation, integrated water management seeks solutions that deal with several challenges at once, deliver broader benefits for communities, Country and the environment, and make better use of all available water sources, not just drinking water.

For Lakes Entrance and surrounds, integrated water management provides a way to respond proactively to climate change, more intense storm events, coastal flooding and sea level rise, while also supporting liveability, amenity and tourism. It offers a framework to respect and strengthen Traditional Owner water values and to provide a clear forward look at what will be needed to secure the region's water future and manage increasing pressure on stormwater and drainage systems.

The purpose of this Plan is to clearly document the key water-related challenges facing the Lakes Entrance area, the locally relevant integrated water management guiding principles, and the opportunities and focus areas identified through engagement, technical analysis and regional planning. Together, these elements will guide more detailed project planning, partnerships and funding bids over time.

Lakes Entrance context and key challenges

The project area includes the town of Lakes Entrance and the nearby communities of Kalimna, Lake Tyers, Toorloo Arm and Lake Bunga. The Plan considers both the natural water cycle – regional climate, lakes and inlets, rivers, wetlands, groundwater and coastal processes – and the built systems that manage water, including potable water supply, wastewater and recycled water, stormwater networks and local flooding.

Three major, interconnected challenges emerge from this context.

The first is **flooding and coastal inundation**. Lakes Entrance is a low-lying coastal town exposed to multiple flooding pathways, including catchment flooding from the steep hills behind the town, intense urban storm events that can exceed the capacity of existing stormwater and drainage systems, and coastal influences such as high lake levels, king tides and storm surges.

The second is **climate change**, with projections indicating hotter, drier conditions overall, more intense bursts of rainfall and rising sea levels.

The third is **population and future growth**, with gradual growth and new development, particularly in Lakes Entrance Northern Growth Area, increasing water demand and putting additional pressure on stormwater and drainage systems if not carefully managed.

To understand these challenges in more detail, water balance modelling was undertaken for current conditions and future scenarios (2040 and 2065). The modelling shows how volumes of rainfall, stormwater runoff, infiltration, evapotranspiration, potable water use, wastewater and recycled water may change over time under a high climate change scenario. It also highlights where alternative water sources could be developed to ease pressure on drinking water supplies and to support environmental, cultural and amenity values.

Integrated water management objectives and initiatives

The East Gippsland Strategic Directions Statement set out eight strategic integrated water management objectives for the region:

1. **Safe, secure and affordable supplies in a changing future**
2. **Effective and affordable wastewater systems**
3. **Managed flood risks**
4. **Healthy and valued waterways and waterbodies**
5. **Healthy and valued landscapes**
6. **Traditional Owner values, opportunities and inclusion**
7. **Community values reflected in place-based planning**
8. **Jobs, economic opportunity and innovation**

Stakeholders and community members helped translate the eight regional integrated water management objectives from the Strategic Directions Statement into local guiding principles that make sense for Lakes Entrance and surrounds. Through workshops and a community survey, participants considered what regional outcomes, such as “safe, secure and affordable supplies” or “managed flood risks”, mean in a coastal town reliant on a constrained potable system and sensitive receiving environments.

Their input was grouped into guiding principles for this Plan:

- Work with Country and Traditional Owners
- Think in whole-of-system terms
- Plan for climate resilience and uncertainty
- Put place and community at the centre of decisions
- Make the most of all water sources
- Protect and enhance the Gippsland Lakes and waterways
- Collaborate and co-invest

A key insight from engagement was the importance of building integrated water management literacy – understanding how the local water cycle works, how the water supply and wastewater services operate, the cultural and commercial values attached to water and the risks that climate change and growth pose to these values.

Using these findings as a lens, a long list of more than 30 potential integrated water management opportunities was developed through stakeholder workshops, an online community survey, technical analysis, and drawing on lessons from other integrated water management planning processes in Victoria. The opportunities were further refined following the engagement process.

This combined process of evidence and engagement led to a shortlist of key integrated water management focus areas for Lakes Entrance with associated opportunities.

Focus Areas

The shortlisted integrated water management focus areas are:

- Focus Area 1: Supporting Traditional Owner outcomes and water values
- Focus Area 2: Community education and engagement in integrated water management
- Focus Area 3: Understanding and managing stormwater
- Focus Area 4: Alternative water opportunities

Snapshot: issues and opportunities

Drawing together the study area description and water cycle overview, several cross-cutting issues and opportunities emerge:

- **Low-lying town, high exposure**
 - **Issue:** Large parts of Lakes Entrance are exposed to flooding and coastal inundation, with stormwater systems already constrained at times by high lake levels and tides.
 - **Opportunity:** Integrated water management can help by combining flood risk management, drainage upgrades and water sensitive urban design with smarter planning controls.
- **Sensitive receiving environment**
 - **Issue:** The Gippsland Lakes and nearby waterways are sensitive to pollution and changes in flow, and community members are deeply concerned about water quality and foreshore health.
 - **Opportunity:** Targeted stormwater quality improvements, erosion control and riparian restoration can reduce pollutant loads and support both environmental and cultural values.
- **Water security in a drying climate**
 - **Issue:** The regional potable water system is under pressure, and climate change is likely to reduce inflows and increase demand.
 - **Opportunity:** There is strong community and stakeholder support for alternative water sources (rainwater, recycled water and harvested stormwater) to reduce reliance on drinking water for non-drinking uses.
- **Growth and change**
 - **Issue:** New development in LENGA and infill in existing urban areas can increase stormwater runoff and infrastructure pressure if not carefully managed.
 - **Opportunity:** Growth areas provide a chance to embed integrated water management and water sensitive urban design from the start, reducing long-term risks and costs.
- **Country and culture**
 - **Issue:** Past decisions have not always reflected Gunaikurnai values and aspirations for water and Country, and Traditional Owner involvement has often been ad hoc or under-resourced.
 - **Opportunity:** Working in partnership with Gunaikurnai Land and Waters Aboriginal Corporation through Focus Area 1 – Supporting Traditional Owner outcomes and water values can embed cultural values, create on-Country roles and support Aboriginal-led water outcomes.
- **Community willingness and capacity**
 - **Issue:** Many community members are already taking action at home but want clearer information and a stronger voice in decisions.
 - **Opportunity:** Focus Area 2 – Community education and engagement in integrated water management can build water literacy, support behaviour change and strengthen local resilience.

Implementation and delivery

Implementing the Plan is a shared effort. EGW and EGSC are joint custodians, working with Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC), East Gippsland Catchment Management Authority (EGCMA), the Department of Energy, Environment and Climate Action (DEECA), Gippsland Ports, Parks Victoria, local businesses and the community.

Stormwater-related initiatives will generally be led by EGSC, while recycled water and broader water supply initiatives will generally be led by EGW, in close partnership with others. Involving communities and stakeholders in implementation will build awareness and understanding of integrated water management, improve project acceptance by incorporating different perspectives early and strengthen community resilience so new practices become part of “business as usual”.

Implementation will be staged, with this Plan outlining proposed actions over the short to medium term and medium to long term. Early work will focus on completing existing strategic work, such as the EGSC stormwater management plan, refining the shortlisted integrated water management focus areas, undertaking targeted investigations and demand assessments, and co-designing Traditional Owner outcomes and community engagement approaches. Later stages will concentrate on enabling infrastructure, larger-scale schemes and embedding integrated water management into planning, design and day-to-day operations across the Lakes Entrance region.

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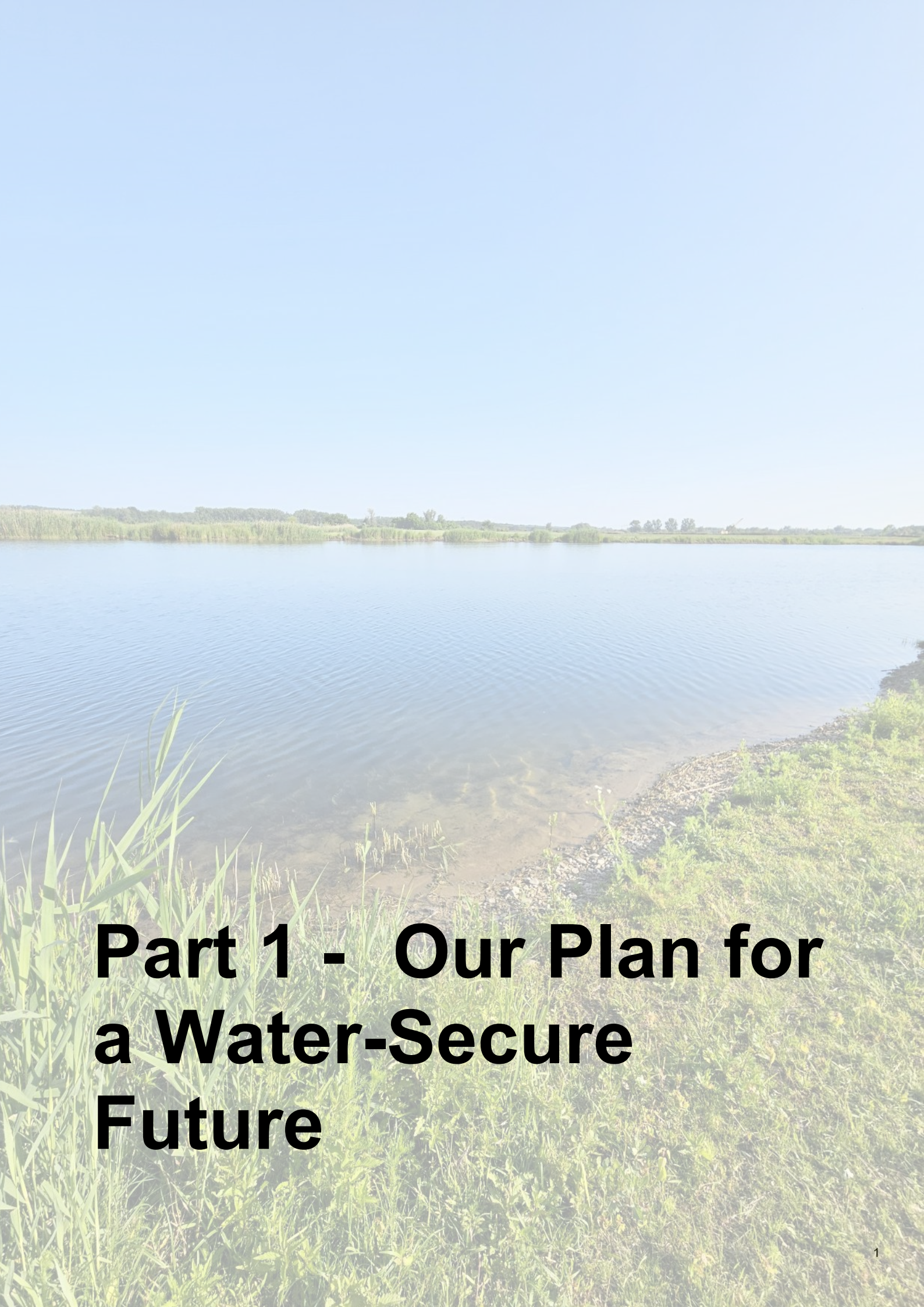
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Glossary and Abbreviations

Term/Abbreviation	Definition
DEECA	Department of Energy, Environment and Climate Action
EGCMA	East Gippsland Catchment Management Authority
EGSC	East Gippsland Shire Council
EGW	East Gippsland Water
GLaWAC	Gunaikurnai Land and Waters Aboriginal Corporation
IWM	Integrated water management
LENGA	Lakes Entrance Northern Growth Area
Plan	Lakes Entrance Integrated Water Management Plan
RCP	Representative Concentration Pathway – A set of standard climate modelling scenarios that describe different possible greenhouse gas concentration pathways into the future.
WSUD	Water Sensitive Urban Design



Part 1 - Our Plan for a Water-Secure Future

1. Integrated Water Management Context and Objectives

1.1 Context

Integrated water management in Victoria is delivered through a state-wide framework that brings together water corporations, councils, Traditional Owners, catchment management authorities and State agencies to plan and act at a regional scale.

The East Gippsland Integrated Water Management Forum and East Gippsland Strategic Directions Statements (2018 and 2022¹) identify an Integrated Water Management Plan for Lakes Entrance and surrounding areas as a priority. For the purposes of the Lakes Entrance Integrated Water Management Plan (Plan), “Lakes Entrance” includes Lakes Entrance, Kalimna, Lake Tyers, Toorloo Arm, and Lake Bunga.

The Strategic Directions Statements set out eight strategic objectives for the region:

1. **Safe, secure and affordable supplies in a changing future**
2. **Effective and affordable wastewater systems**
3. **Managed flood risks**
4. **Healthy and valued waterways and waterbodies**
5. **Healthy and valued landscapes**
6. **Traditional Owner values, opportunities and inclusion**
7. **Community values reflected in place-based planning**
8. **Jobs, economic opportunity and innovation**

This Plan translates those regional objectives into locally relevant guiding principles and opportunities tailored to the Lakes Entrance context.

Connecting with Country

For thousands of years, the Gunaikurnai people have maintained a deep, intrinsic connection with the waterways and wetlands of this region. Water holds significant cultural and spiritual value. As Traditional Custodians, Gunaikurnai people hold deep knowledge of the water systems and traditional stories unique to this landscape.

This Plan respects that history and supports the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) in their ongoing work to care for Country and to strengthen Aboriginal water outcomes.

Living and working on the water

Today, the region’s prosperity remains closely tied to the health of its water environments. The Lakes Entrance region supports critical commercial, recreational and lifestyle values, including:

- **Economy:** Lakes Entrance is home to the largest fishing port in south-eastern Australia, and water is an important economic enabler for other sectors, including tourism, agriculture and manufacturing
- **Tourism:** The local economy relies heavily on nature-based tourism, recreational boating and fishing, all of which depend on a healthy lakes system
- **Lifestyle:** Residents highly value the amenity of the foreshore and the recreational opportunities that waterways and coastal environments provide

Our water systems are coming under increasing pressure as climate change, sea-level rise and new development place greater demands on how we supply, use and manage water. To protect the region’s lifestyle and economy, we cannot rely on independent systems. We need integrated approaches that support both current and future environments.

¹ Department of Environment, Land, Water and Planning (2022) East Gippsland Integrated Water Management Forum: strategic directions statement. Melbourne: Victorian Government.

1.2 What we mean by Integrated Water Management

For decades, different elements of water management were handled in separate systems, often planned and operated independently:

- **Water supply:** focusing on pipes and taps
- **Sewerage:** focusing on collection, treatment and disposal
- **Stormwater:** focusing on drainage and flood mitigation

Integrated water management views all parts of the water cycle as a single, interconnected system. It formalises collaboration between Traditional Owners, water corporations, local governments, catchment management authorities and State agencies to define and achieve common goals.

By viewing water management holistically, integrated water management seeks positive outcomes for the environment, society and economy by:

- **Optimising water efficiency and demand management**
- **Increasing water reuse and recycling**
- **Improving stormwater quality and quantity management**
- **Supporting resource recovery (such as energy and nutrients from wastewater)**
- **Delivering solutions that solve multiple problems at once rather than shifting issues from one part of the system to another**

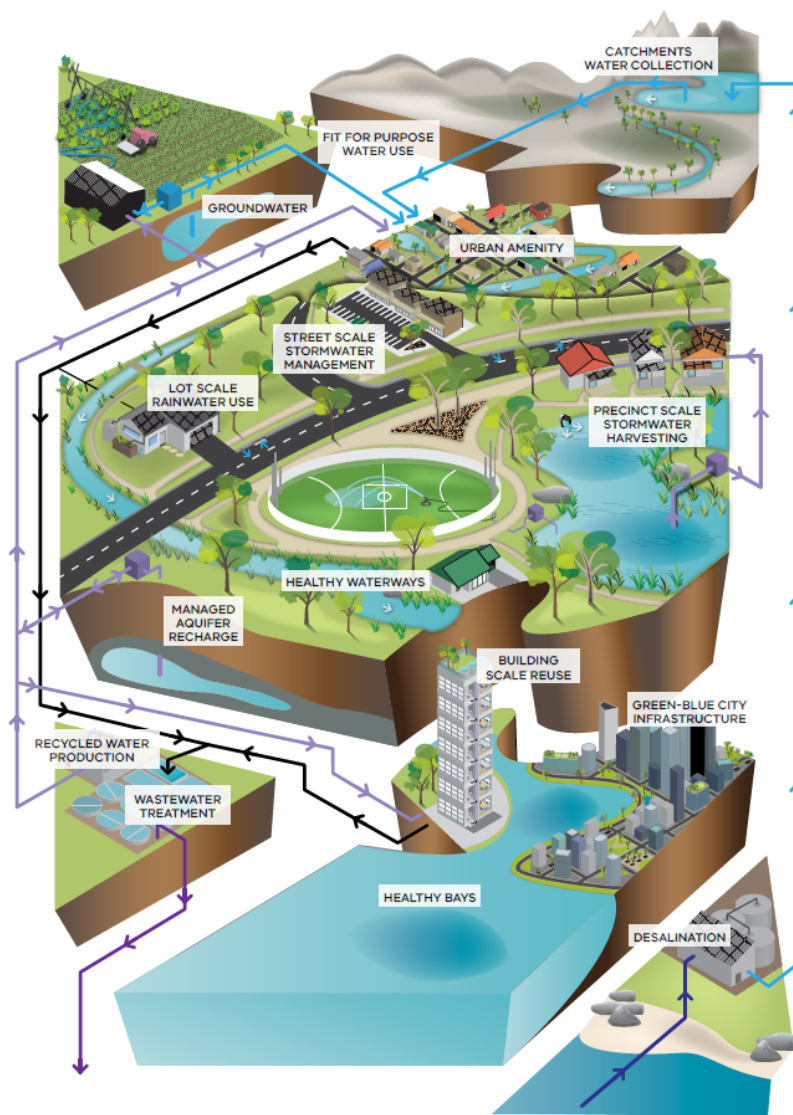


Figure 1 Examples of integrated water management (source: Integrated Water Management Framework, DELWP, 2017)

1.3 Why Integrated Water Management for Lakes Entrance

This Plan applies integrated water management to the specific context of Lakes Entrance and surrounding communities, where water-related challenges are closely intertwined with liveability, culture, environment and the local economy.

Integrated water management recognises that the way water is managed in one part of the system affects others.

For example:

- Stormwater can cause flooding and pollution if unmanaged, but can also be a resource when harvested
- Wastewater can be treated as a waste or used as a valuable recycled water source
- Green open spaces and healthy waterways provide amenity, cooling and tourism value as well as environmental benefits

In Lakes Entrance, integrated water management allows partners to:

- Respond to climate and coastal risks proactively, rather than reacting to events as they occur
- Use alternative water sources to reduce dependence on potable supplies and ease pressure on existing systems

- Support Traditional Owner leadership in decisions about water and Country
- Maintain the coastal character, amenity and liveability that residents value, and that underpin the tourism and fishing economy
- Preserve and protect the natural landscape and healthy waterways

The following sections describe the challenges driving the need for integrated water management in Lakes Entrance (refer to Section 1.4) and the guiding principles shaping this Plan (refer to Section 1.5).

1.4 Challenges

Lakes Entrance and surrounding communities face a combination of challenges, including a changing climate, rising sea levels and the demands of urban growth. These pressures interact and reinforce each other.

1.4.1 Climate Change and Water Security

The region is predicted to become warmer and drier over time. By 2065, under high climate change scenarios, significant shifts are expected that will stress potable water supplies and local environments and existing stormwater systems:

- **Decreased rainfall:** Average annual rainfall is predicted to drop by up to around 16% to 17% in high change scenarios
- **Increased evaporation:** Evaporation rates are expected to increase by around 10% to 11%, drying soils and vegetation and reducing runoff
- **Water supply pressure:** The current water supply system (the Mitchell system) is already under pressure to meet agreed levels of service. Without alternative water sources and demand management, water restrictions could become more frequent
- **More intense storms and stormwater pressures:** Heavier downpours will generate higher runoff volumes and peak flows over short periods, placing greater pressure on existing drainage and stormwater infrastructure and increasing local flooding and erosion risks (see Section 1.4.2)

Lakes Entrance and surrounds sit within the Tambo River Basin area, which has been used to understand the climate projections for the area. The climate projections indicate:

- Higher average temperatures, longer warm periods and more frequent hot days
- Lower average annual rainfall overall, even as intense rainfall events become more common
- Higher evaporation, leading to drier soils, stress on vegetation and reduced runoff

Under a high emissions scenario (Representative Concentration Pathway, RCP 8.5), projections for 2040 and 2065 show:



Figure 2 Estimated changes to average temperature, rainfall and potential evapotranspiration under a high emissions scenario (RCP 8.5) (based on DEECA, 2020)

These changes will:

- Reduce water available to natural systems and water supply sources
- Lower runoff and baseflows, affecting wetlands, waterways and cultural values
- Increase the frequency and severity of stormwater and drainage issues if systems are not adapted to handle more intense rainfall
- Reinforce the need for diverse water sources and strong demand management as well as integrated approaches to stormwater, flooding and coastal inundation

1.4.2 Flooding and Coastal Inundation

The region is expected to experience more frequent and intense extreme weather events, including storms and broad regional flooding. Lakes Entrance faces unique vulnerabilities due to its low-lying topography and coastal location, which interact with the stormwater and drainage pressures mentioned in Section 1.4.1.

Lakes Entrance is exposed to multiple flooding mechanisms, including:

- **Catchment flooding** from the steep hills behind the town
- **Urban flash flooding** from intense rainfall over streets, roofs and car parks
- **Coastal flooding**, including king tides and storm surges

Sea level rise will significantly change the flooding profile:

- The Victorian Coastal Strategy uses sea level rise benchmarks of 0.2 m by 2040 and 0.8 m by 2100
- More recent projections suggest East Gippsland could experience up to 0.96 m of sea level rise by 2100 under very high emissions

Analysis indicates that applying an additional 0.5 m of sea level rise to past events could:

- Increase the chance of a **minor flood** in any year from 50% to 100%
- Increase the chance of a **major flood** in any year from 5% to 50%

Rising lake levels and high tides will also impact our ability to drain stormwater into the lakes. As sea levels rise, existing gravity-based drainage systems will struggle to empty, increasing the risk of stormwater backing up into streets and properties.

Managing stormwater and flooding is therefore a central part of the integrated water management response.

1.4.3 Population and Development

The Lakes Entrance region has an estimated population of around 9,050 (as at 2024) and is expected to grow slowly over time. Most future residential development is expected in the LENGA area, which sits at a higher elevation than the town centre and is less exposed to coastal flooding.

Even modest growth has implications for water:

- **Runoff risk:** Changes in land use increase impervious surfaces. New roofs, roads and car parks generate more stormwater runoff and higher peak flows, placing greater pressure on aging drainage infrastructure. In Lakes Entrance, a sealed (impervious) hectare of land can generate around four times the runoff of a natural hectare, contributing to local flooding if not managed
- **Pollution loads:** Increased runoff can carry sediment, litter, nutrients and hydrocarbons into the Gippsland Lakes, affecting water quality, fish habitat and seagrasses that support local industry and recreational values
- **Demand and wastewater:** New development increases potable water demands and wastewater volumes, which must be managed within the capacity of existing systems or through new infrastructure and approaches.

1.5 Guiding Principles

The guiding principles translate the wider objectives into practical tests for how integrated water management opportunities will be identified, assessed and implemented. They were developed by synthesising:

- The regional objectives and narrative in the East Gippsland Integrated Water Management Strategic Directions Statement
- Feedback from the Lakes Entrance integrated water management workshops and online survey about what matters most to the community, partners and Traditional Owners
- Lessons from other integrated water management planning processes in Victoria.

They provide a practical decision lens for identifying, assessing and implementing integrated water management opportunities in Lakes Entrance and surrounding communities.

1. Work with Country and Traditional Owners

- Recognise and respect Gunaikurnai people as the Traditional Custodians of the land and waters in the Plan area
- Support Traditional Owner-led water outcomes, including the use of cultural water entitlements and implementation of the Gunaikurnai Whole-of-Country Plan
- Involve GLaWAC early in decision-making on integrated water management opportunities that affect Country and cultural values

2. Think in whole-of-system terms

- Treat all aspects of the water cycle – potable supply, wastewater, stormwater, waterways, groundwater and coastal processes – as connected parts of one system
- Avoid shifting problems from one part of the system to another (for example, from flooding to water quality, or from one location to another)
- Seek options that deliver multiple benefits across water security, flood risk, environmental health, cultural values and liveability

3. Plan for climate resilience and uncertainty

- Recognise that climate change and sea level rise are already affecting Lakes Entrance and will intensify over time
- Use up-to-date climate and sea level rise information to guide planning and design
- Focus on flexible, adaptive and “no-regrets” solutions that perform under a range of future conditions

4. Put place and community at the centre

- Reflect local values, priorities and identity, including the importance of the Gippsland Lakes, foreshore and coastal environment to residents and visitors
- Make integrated water management concepts and decisions easy to understand, building integrated water management literacy in the community
- Involve communities in shaping, delivering and stewarding integrated water management initiatives, not just receiving information

5. Make the most of all water sources

- Prioritise fit-for-purpose use of water, matching water quality to need (for example, recycled or harvested stormwater for irrigation and amenity uses)
- Reduce dependence on potable water by increasing alternative water use where it is safe, feasible and supported
- Support demand management and water efficiency alongside supply-side solutions

6. Protect and enhance the Gippsland Lakes and waterways

- Recognise the Gippsland Lakes and surrounding waterways as sensitive receiving environments with high cultural, environmental and economic value

- Manage stormwater and wastewater to reduce pollutant loads and support healthy flows and habitats
- Use integrated water management opportunities to enhance waterway and foreshore health, amenity and biodiversity wherever possible

7. Collaborate and co-invest

- Work across organisational boundaries, including EGW, EGSC, GLaWAC, EGCMA, DEECA, other agencies, business and community to identify and progress integrated water management opportunities
- Explore partnership approaches and co-investment models where benefits are shared
- Use this Plan as a common reference point to support funding applications and investment decisions

The guiding principles deliberately mirror the eight regional integrated water management outcomes but express them as practical commitments for Lakes Entrance. The guiding principles give partners a shared narrative about what Lakes Entrance is working towards, a simple check for future projects and decisions, and a foundation for the focus areas, initiatives, implementation roadmap and measures of success later in this Plan.

2. Integrated Water Management Plan Development

2.1 A Collaborative Process

This Plan has been developed as a shared effort between EGW, EGSC, GLaWAC, EGCMA, DEECA and other regional partners. It follows the Victorian Integrated Water Management Framework, and builds on stakeholder engagement and technical analysis to develop prioritised actions.

Throughout the process, particular attention was given to elevating Traditional Owner perspectives and reflecting the values and priorities of Gunaikurnai people in the integrated water management focus areas.

At a high level, the process involved the following stages:

1. Understanding the system – building a technical evidence base on the Lakes Entrance water cycle, including:

- Water balance modelling for current and future climate scenarios (2040 and 2065)
- Stormwater analysis across the local catchments
- A review of existing strategies and plans, including the East Gippsland Integrated Water Management Strategic Directions Statement, Lakes Entrance Growth and Adaptation Strategy and Gunaikurnai Whole-of-Country Plan

2. Identifying opportunities – working with stakeholders to identify more than 30 potential integrated water management opportunities, ranging from policy and planning measures to on-ground works and education programs.

3. Prioritising the focus areas – refining the long list to align with four key integrated water management focus areas (Focus Area 1 to Focus Area 4 described later in this Plan), based on where effort can deliver the greatest benefit for the community, Country and the environment.

4. Planning for implementation – identifying lead agencies, partners and likely staging (short to medium term and medium to long term), so the Plan can guide future business cases, funding bids and project design.

2.2 Stakeholder and Community Engagement

Engagement has been central to this Plan. It was designed to:

- Understand how water-related challenges are experienced on the ground
- Co-design a long list of integrated water management opportunities
- Build shared ownership of the final focus areas and initiatives

The engagement program included three multi-agency stakeholder workshops (August 2024, February 2025 and April 2025) and an online community survey hosted on EGSC's engagement platform.

For this Plan, Traditional Owner input was sought through participation in a stakeholder workshop, where GLaWAC representatives contributed perspectives on cultural values, risks and opportunities for water and Country in and around Lakes Entrance. Relevant Gunaikurnai strategies and projects were also reviewed, including the Gunaikurnai Whole-of-Country Plan and GLaWAC's Strategic Plan 2023-2033.

Figure 3 provides a snapshot of this engagement at a glance, including the number of workshops, survey responses, website visits and social media posts used to promote participation.



Figure 3 Stakeholder and community consultation approaches

Overall the engagement covered a range of topics that shaped this plan, including:

- The value of water in Lakes Entrance and surrounding communities
- The importance of protecting the Gippsland Lakes, foreshore, and the health of receiving waterways and landscapes
- Water-related challenges and key pressures facing the region
- Opportunities to better use rainwater, recycled water and stormwater
- The need to embed Traditional Owner values and leadership in water decisions
- Local opportunities and priorities for integrated water management

2.3 Defining the Plan: What We Heard

Community and stakeholder input provided a strong mandate for the directions in this Plan. Across these inputs, several clear messages emerged:

Water health is non-negotiable

Water quality, waterways and foreshore health were consistently ranked as top priorities.

Concerns focused on pollution from stormwater runoff, algal blooms, erosion and the need for riparian vegetation planting and protection, particularly around Lakes Entrance, Lake Tyers and Lake Bunga.

Pressure of growth and development

90% of respondents agreed that population growth and housing development are significantly impacting water issues

People are particularly concerned that new developments can increase stormwater pressure on neighbours and that some existing infrastructure is ageing and insufficient.

A call for alternative water

There is broad willingness to reduce reliance on drinking water for non-essential tasks.

91% of respondents are happy to use rainwater

80% of respondents are happy to use recycled wastewater for appropriate non-drinking purposes

Support for harvested stormwater is also high, especially for irrigation of public spaces and some commercial uses.

Desire for involvement, information and respect for Country

Community members want clearer information about water systems, responsibilities and future plans, and more opportunities to contribute to decisions.

Traditional Owner engagement highlighted the need for ongoing, properly resourced involvement and for water decisions to respect and enhance Gunaikurnai values and priorities for Country.

Figure 4 What we heard from the engagement

These messages sit at the core of this Plan. They informed the guiding principles (Section 1.5), long list of opportunities, and the four focus areas that are introduced below and described in more detail in Section 4.

2.4 Identifying Opportunities

A technical assessment was undertaken to understand the local catchment characteristics and values in Lakes Entrance and surrounds (see Section 3 for a summary). The technical analysis together with the findings from the engagement process informed the development of a long list of over 30 integrated water management opportunities for Lakes Entrance and surrounds. The long list included a breadth of opportunities across themes such as education and engagement, supporting Cultural water values, alternative water opportunities, improving stormwater management practices, urban greening, and supporting broader environmental and ecological values in the local area. The opportunities long list was further refined with input from stakeholders, through the multi-agency workshops, as well as further input from EGW and EGSC.

The integrated water management initiatives are described further in Section 4.

2.5 From long list to focus areas and initiatives

The final step in developing the Plan was to move from the long list of over 30 opportunities to a concise set of focus areas and initiatives that can guide investment.

Using the engagement feedback and technical analysis, the opportunities were refined and grouped into four focus areas. Together, these provide the organising framework for integrated water management in Lakes Entrance and surrounding townships:

Focus Area 1: Supporting Traditional Owner outcomes and water values

Focus Area 2: Community education and engagement in integrated water management

Focus Area 3: Understanding and managing stormwater

Focus Area 4: Alternative water opportunities

Each focus area supports multiple guiding principles (for example, waterway health, Traditional Owner values and economic resilience) and aligns with the priorities in the East Gippsland Strategic Directions Statement and other regional strategies. The focus areas are described in more detail in Section 4.

2.6 Turning Feedback into Action

Feedback from stakeholders, community and Traditional Owners was synthesised with technical analysis to define the Plan's focus. Table 1 summarises how key messages from engagement have been translated into the focus areas and initiatives in this Plan.

Table 1 *From feedback to action*

You Said...	What we are doing...
"Water decisions need to respect Gunaikurnai values and Country."	Focus Area 1 – Support Traditional Owner outcomes and water values Commits to ongoing partnership with GLaWAC, supporting Traditional Owner-led projects, embedding cultural values in integrated water management initiatives and ensuring engagement is properly resourced and sustained over time.
"We want to be involved and educated."	Focus Area 2 – Community education and engagement in integrated water management Focuses on building integrated water management literacy, providing clear information about local water systems and creating opportunities for community participation in planning, stewardship and decision-making.
"Pollution from stormwater runoff is a major concern."	Focus Area 3 – Understanding and managing stormwater Includes initiatives to improve stormwater planning, modelling and governance, implement Water Sensitive Urban Design (WSUD), and deliver targeted drainage and water quality improvements to reduce pollutant loads and manage stormwater runoff from developments.
"New developments need to manage their own water."	
"We are ready to use recycled water."	Focus Area 4 – Alternative water opportunities Prioritises investigation of a Class A recycled water network, stormwater harvesting schemes and local rainwater solutions to increase water security for homes, businesses, open space and cultural uses.

3. Lakes Entrance and Surrounding Communities

3.1 Study area

The Plan focuses on Lakes Entrance and its surrounding townships of Kalimna, Lake Tyers, Toorloo Arm and Lake Bunga. Together, these communities form a coastal settlement pattern that is:

- Strung along the Gippsland Lakes and coastal dunes
- Surrounded by forested hills and rural landscapes
- Connected by key transport routes that link Lakes Entrance to Bairnsdale and Orbost

Lakes Entrance itself is a low-lying coastal town built on and behind a narrow sand barrier that separates the lakes from Bass Strait. The entrance channel and associated jetties, wharves and breakwaters are central to the town's identity as a fishing port and tourism destination. LENGA provides the main opportunity area for future urban growth at higher elevation than the existing town centre.

Kalimna sits on higher ground to the north-west, overlooking the lakes and foreshore. Lake Bunga and Toorloo Arm are smaller coastal and hinterland communities, while Lake Tyers has strong environmental and cultural values.

Figure 5 shows the Plan area, including the townships and key water features.

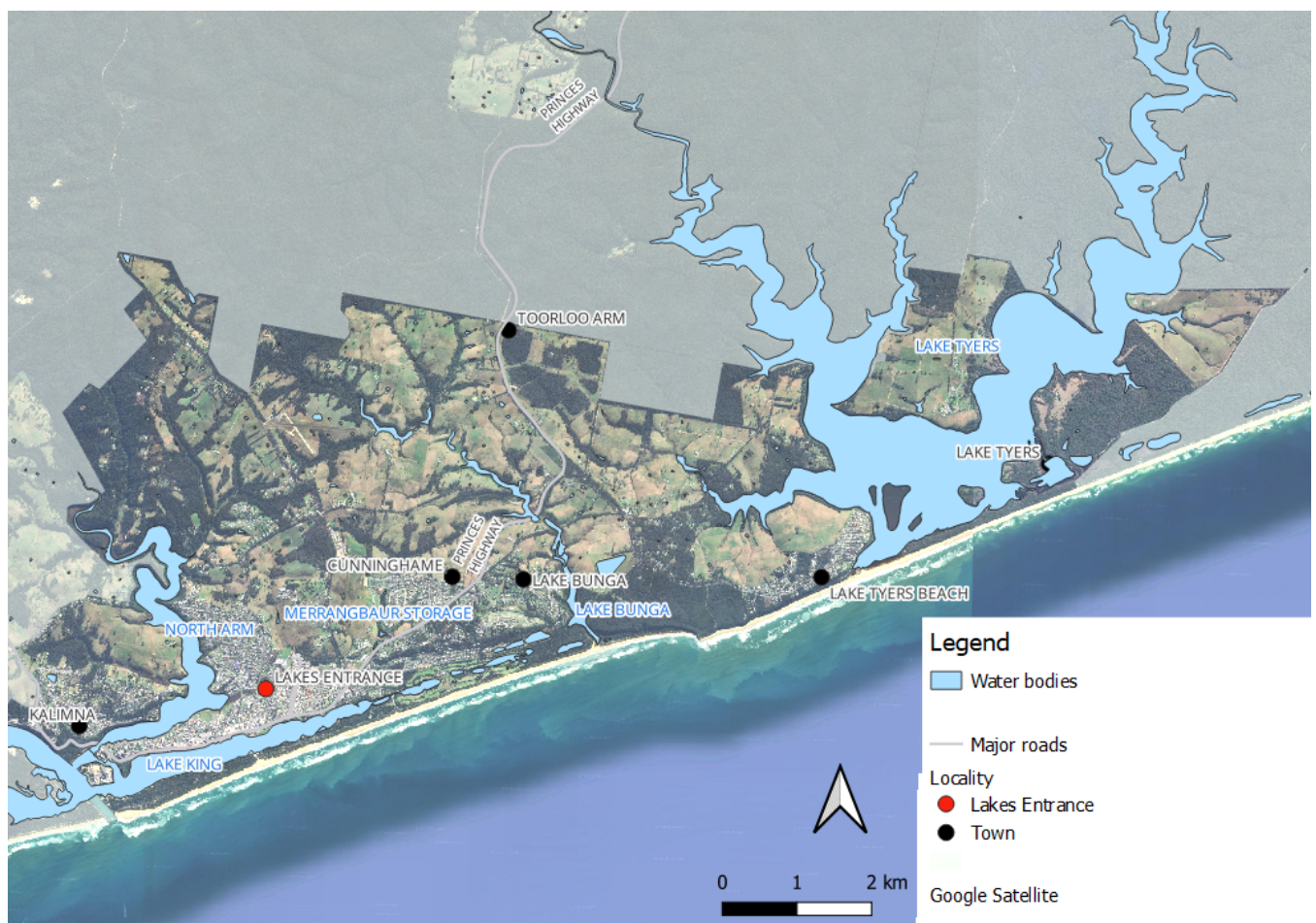


Figure 5 Lakes Entrance Integrated Water Management Plan area

3.2 Environment, Country and Water

Water is central to the identity and health of this region. The Gippsland Lakes, coastal wetlands, rivers and estuaries support:

- **Cultural values** – for Gunaikurnai people, water and Country are inseparable. Lakes, rivers, wetlands and the sea are integral to story, spirituality, identity and wellbeing
- **Environmental values** – the Gippsland Lakes system, associated wetlands and coastal habitats support diverse plant and animal communities, including migratory birds, fish and seagrasses
- **Economic values** – commercial fishing, tourism and recreation all depend on healthy waterways, foreshores and beaches
- **Community values** – the foreshore, lakes, beaches and walking trails are central to local lifestyle, recreation and liveability

The Gippsland Lakes are also a sensitive receiving environment. Changes in water quality, flows, and sediment loads can have lasting impacts on seagrass beds, fish habitat, recreational water quality and the broader health of the system. Stormwater and wastewater management in Lakes Entrance, therefore, has regional consequences, not just local ones.

For Gunaikurnai people, these changes are experienced not only as environmental impacts, but as impacts on Country and culture. This Plan recognises that improving the way water is managed is part of caring for Country and supporting cultural renewal.

3.3 Land use, economy and growth

Lakes Entrance has a diverse local economy centred on:

- Fishing and marine industries – the town hosts the largest fishing port in south-eastern Australia, with associated processing, servicing and supply businesses
- Tourism and hospitality – accommodation, cafes, restaurants, boating and nature-based tourism are major employers and drivers of local activity
- Retail and services – the town centre provides retail, health, education and community services, supporting residents and visitors

Residential areas are primarily located:

- On the low-lying coastal plain and sand barrier around Lakes Entrance
- On the sloping hillsides of Kalimna and other elevated areas
- In smaller coastal and hinterland settlements at Lake Bunga, Lake Tyers and Toorloo Arm

Future growth is expected to be relatively modest in total numbers but significant in impact, particularly where it changes how water moves across the landscape. Most new residential development is anticipated within LENGA, which:

- Sits at a higher elevation and is less exposed to coastal inundation
- Provides opportunities to embed water sensitive urban design and integrated water management principles from the outset
- Will, if not carefully planned, still contribute to increased stormwater runoff and downstream pressures

Infill development and redevelopment in existing urban areas will also continue, particularly in Lakes Entrance and Kalimna. Without integrated planning, this can:

- Increase impervious surfaces and stormwater runoff, putting pressure on older drainage infrastructure
- Intensify local flooding and erosion issues, especially in known hotspots
- Add to pollution loads entering the Gippsland Lakes and nearby waterways

The Integrated Water Management Plan provides a way to reconcile growth and development with protection of the lakes, foreshore and community values.

3.4 Lakes Entrance water cycle and services

This Plan considers both the natural water cycle and the urban water services that support the community. Together, they make up the integrated water management “system” for Lakes Entrance and its surrounding townships.

3.4.1 Natural water cycle

Key natural water features and processes include:

- **Rainfall and climate** – the region’s climate is characterised by variable rainfall, with distinct wet and dry periods. Climate change is expected to bring warmer, drier conditions overall, more intense downpours and rising sea levels (Section 1.4)
- **Catchments and hillslopes** – steep forested hills behind Lakes Entrance and Kalimna drain rapidly towards the town, creating potential for flashy creeks, and overland flows in heavy rain
- **Gippsland Lakes and estuaries** – the lakes, coastal lagoons and estuaries act as both a receiving environment and a buffer, but are sensitive to nutrient, sediment and pollutant loads from urban and rural catchments
- **Groundwater and wetlands** – shallow groundwater, wetlands and low-lying areas interact with surface water, influencing local flooding, salinity and vegetation health

These processes are already being influenced by climate change and sea level rise, which are expected to increase coastal inundation, prolong high lake levels and make it harder to drain stormwater by gravity.

3.4.2 Potable water supply

Lakes Entrance and surrounding townships are supplied with reticulated potable water, operated by EGW. The system draws from the regional Mitchell water supply system, which is already under pressure to meet agreed levels of service in a drying climate.

Key characteristics include:

- Treated drinking water is delivered via a network of trunk and distribution mains to homes, businesses and public facilities.
- Water is used for household needs, commercial activities, tourism and key public uses such as open space irrigation and community facilities.
- Under climate change scenarios, reduced rainfall and higher evaporation will place additional stress on this system, increasing the likelihood of water restrictions without new sources and stronger demand management.

Reducing demand for potable water through efficiency and alternative water sources is therefore a major focus of this Plan.

3.4.3 Wastewater and recycled water

Wastewater from Lakes Entrance and surrounding serviced townships is collected in a reticulated sewerage system and treated at EGW’s wastewater treatment infrastructure. The system is designed to:

- Protect public health by safely collecting and treating sewage
- Meet regulatory requirements for discharge and/or reuse
- Minimise environmental impacts where treated water is released or reused

There is potential for greater use of recycled water (for example, for irrigation of open spaces, commercial uses or environmental enhancement) where it is safe, cost-effective and supported by the community and regulators. Unlocking this potential is a key opportunity identified in Focus Area 4 – Alternative water opportunities.

3.4.4 Stormwater, drainage and flooding

Stormwater is managed through a combination of:

- Roadside drains, pits and pipes in urban areas
- Open drains, waterways and wetlands
- Coastal and lakes outlets, which rely largely on gravity to discharge stormwater into the Gippsland Lakes and associated water bodies

Lakes Entrance is particularly vulnerable to stormwater and flooding issues because:

- Much of the town is low-lying and flat, with limited fall to the lakes
- Stormwater systems can be constrained by high lake levels, king tides and storm surges, which reduce or prevent gravity drainage
- In some locations, erosion and undercutting around drainage outlets threaten essential infrastructure, including water and sewerage assets

Intensifying rainfall events and sea level rise are expected to increase the frequency and severity of flooding and drainage problems if no action is taken. Managing stormwater differently, including source control, WSUD, detention, treatment and alternative use, is therefore central to the integrated water management response.

4. Focus Areas and Key Initiatives

4.1 Development of Focus Areas

The focus areas bring together the Plan's guiding principles and the region's wider IWM objectives into a practical structure for action. Four key focus areas have been identified for Lakes Entrance and the surrounding townships, as introduced in Section 2, and described in more detail below. Together, these elements provide the framework for future integrated water management projects, investment and collaboration. The four focus areas are:

- **Focus Area 1: Supporting Traditional Owner outcomes** and water values embeds Gunaikurnai values, priorities and leadership in integrated water management decisions and projects
- **Focus Area 2: Community education and engagement in integrated water management** recognises that lasting change relies on informed, involved communities and partners
- **Focus Area 3: Understanding and managing stormwater** addresses flooding, drainage and water quality in a low-lying coastal town that is already feeling the effects of climate change
- **Focus Area 4: Alternative water opportunities** explores how rainwater, recycled water and harvested stormwater can reduce pressure on potable supplies and support amenity and cultural uses.

The following sections describe each focus area in more detail, outlining the intent and indicative initiatives that will guide more detailed project planning and investment. Section 5 then builds on this framework by outlining how the focus areas will be implemented over time, including roles, staging and arrangements for monitoring and review.

Focus Area 1 – Supporting Traditional Owner outcomes and water values

For Gunaikurnai people, water is central to Country, story and identity. The lakes, rivers, wetlands and coastal areas around Lakes Entrance hold deep cultural significance. Engagement for this Plan emphasised that water decisions must respect and enhance Gunaikurnai values and priorities, and that participation should be ongoing and properly resourced.

Focus Area 1 aims to:

- Enable Traditional Owner outcomes and water values to be a core part of the Plan, not an add-on
- Embed Gunaikurnai values and priorities within integrated water management decisions and projects
- Align integrated water management actions with the Gunaikurnai Whole-of-Country Plan and related cultural water initiatives
- Support GLaWAC-led projects that care for waterways, wetlands and coastal areas
- Create opportunities for on-Country employment, training and leadership linked to integrated water management.

Focus Area 2 – Community education and engagement in integrated water management

Consultation showed that many people already take steps at home to save water and protect drains, but would like clearer information about how the local water system works and how decisions are made. Agencies also recognised that integrated water management can only succeed if communities understand the issues and feel they have a voice. There is also benefit in engaging stakeholders more broadly about integrated water management.

Focus Area 2 aims to:

- Build understanding and involvement
- Explain how water is managed locally, in clear and accessible ways
- Support practical actions that residents, businesses and community groups can take
- Provide ongoing opportunities for people to participate in decisions and stewardship activities
- Strengthen trust and collaboration between agencies, Traditional Owners and the community.

Focus Area 3 – Understanding and managing stormwater

Lakes Entrance and its neighbouring townships experience a mix of steep catchments, low-lying urban land and coastal influences. When heavy rain coincides with high lake levels or tides, the drainage system can struggle, leading to local flooding, ponding and erosion. Community feedback highlighted stormwater, drainage and water quality as major concerns, especially in areas such as Lakes Entrance, Kalimna and Lake Bunga.

Focus Area 3 aims to:

- Improve how stormwater is understood, planned and managed
- Reduce flood and drainage risks to homes, businesses and key roads
- Protect waterways, lakes and coastal environments from sediment and pollution
- Safeguard important infrastructure (including water and sewerage assets) from erosion and damage
- Support more water-sensitive development as the town grows.

Focus Area 4 – Alternative water opportunities

The region relies on a potable water system that is already under pressure and is likely to face more stress as the climate becomes warmer and drier. At the same time, the community has expressed strong support for using rainwater, recycled water and harvested stormwater for non-drinking purposes such as irrigation and some commercial uses.

Focus Area 4 aims to:

- Reduce reliance on drinking water for non-essential uses
- Improve water security across Lakes Entrance and surrounding townships
- Support greener, cooler parks, streets and public spaces
- Create options for cultural and recreational uses of water that do not depend solely on the potable system.

4.2 Integrated Water Management Initiatives

To turn the focus areas into practical actions a series of integrated water management initiatives and key actions have been nominated for each focus area.

To define the key initiatives, the long list of integrated water management opportunities for Lakes Entrance and surrounds (introduced in Section 2) was reviewed and refined, with key opportunities grouped under each focus area. Actions for each initiative were also proposed over the short- to medium-term and medium- to long-term horizons.

The final initiatives and actions have been shaped by the stakeholder engagement process and the technical assessments, as well as further input from EGW and EGSC.

The integrated water management initiatives and associated actions are shown in Table 2.

Table 2 *Integrated water management (IWM) initiatives and action plan*

IWM opportunity name	Description	Actions	
		Short- to medium-term actions	Medium- to long-term actions
Focus Area 1 – Supporting Traditional Owner outcomes and water values			
Support Cultural values	For thousands of years, the Gunaikurnai people have maintained a deep, intrinsic connection with the waterways and wetlands of this region. Water holds significant cultural and spiritual value. As Traditional Custodians, Gunaikurnai people hold deep knowledge of the water systems and traditional stories unique to this landscape. The Plan recognises that caring for water is part of caring for Country, and that Gunaikurnai leadership and knowledge are essential to long-term success.	– Recognise and respect Gunaikurnai people as the Traditional Custodians of the land and waters in the Plan area – Establish a partnership framework for IWM and work with GLaWAC to agree principles, roles, protocols and resourcing for long-term collaboration on integrated water management projects – Support GLaWAC-led cultural water projects and work with the GLaWAC to identify opportunities for IWM to support Cultural values – Involve GLaWAC early in decision-making on IWM opportunities that affect Country and cultural values	
Focus Area 2 – Community education and engagement in integrated water management			
Community engagement and education	Build community awareness and provide opportunities to engage with the community on IWM initiatives and projects.	– Embed community engagement and education in IWM projects – Build community and stakeholder awareness about IWM and its benefits – Create a Lakes Entrance integrated water management information hub, using simple, locally tailored information such as through a web hub, fact sheets, and signage at key water sites – Build awareness about and influence sustainable water use for business practice – Help households and businesses act by building awareness about the importance of and opportunities to improve water efficiency and contribute to healthy waterways – Support community stewardship and participation	
Urban waterway enhancement and education	Protect and rehabilitate waterways to improve waterway health, with a strong focus on education across the community and key stakeholder groups.	– Explore opportunities to improve the health of waterways in the region and to support the natural environment – Develop a plan to engage and educate the public and other stakeholders about the importance of waterway health	
Coastal park protection	Protect the coastal park at Lake Bunga, which provides significant natural value as well as community amenity.	– Build awareness about the natural value of the coastal park and explore opportunities to help protect those values through integrated water management	
Incentives for sustainable development	Provide incentives for more sustainable development (in addition to existing standards and planning requirements).	– Explore possible incentives for sustainable development and beyond best practice integrated water management approaches	
Understand the most appropriate solutions for development	Understand the localised challenges with integrating new assets from sub-divisions and other development with existing infrastructure (e.g. septic tanks). Consider roles and responsibilities and building awareness of the challenges.	– Build alignment across key stakeholders and organisations about the roles and responsibilities as well as planning processes for the integration of existing and new infrastructure	– Embed localised needs and solutions into future IWM projects

IWM opportunity name	Description	Actions	
		Short- to medium-term actions	Medium- to long-term actions
Focus Area 3 – Understanding and managing stormwater			
Improve the management of stormwater entering sensitive and high value environments	Improve the management of stormwater runoff, including the flow rates, volumes and quality of stormwater, entering areas with high environmental, community and cultural value. Review opportunities for stabilisation, revegetation, stormwater treatment and drainage improvements in these areas.	– Assess opportunities to improve stormwater management approaches, starting with two case study areas: • Lake Bunga – options to improve the quality of stormwater runoff into Lake Bunga • Kalimna – review existing stormwater infrastructure in Kalimna and explore new stormwater management and gully protection measures to reduce erosion	– Implement identified priorities for Lake Bunga and Kalimna – Explore opportunities to improve stormwater management in other areas with high environmental, cultural and/or community value – Explore opportunities for diversion or capture and slow release of stormwater flows
Manage stormwater flows into Eastern Creek	Introduce and/or expand stormwater management measures to reduce the volume of excess stormwater entering Eastern Creek and to provide broader benefit to the environment and community.	– Review opportunities to manage stormwater flows into Eastern Creek, including: • Understand the changing hydrology due to urban growth and assess the capacity of the current infrastructure and system • Assess the feasibility of stormwater management assets (new development and retrofit) • Understand current and required future maintenance practices • Explore solutions that provide multiple benefits such as supporting ecological values and liveability – Understand the tidal impact on Eastern Creek taking into consideration sea-level rise and climate impacts – Build awareness about the waterway value of Eastern Creek	– Work with developers and other stakeholders to plan, design and implement priority projects
Blue-green infrastructure and greening streetscapes	Include blue-green infrastructure (assets that include both vegetated elements and stormwater management elements) and ‘green’ streetscapes in order to store stormwater, reduce runoff and also to provide broader benefit such as urban greening and cooling. Consider opportunities for both new developments and retrofitting. Use alternative water supplies to help ‘green’ existing public open and green space.	– Integrate blue-green infrastructure and urban greening principles into existing processes and opportunities – Identify key opportunities and priority locations for urban greening, including blue-green infrastructure and nature-based solutions	– Embed blue-green infrastructure and greening opportunities into stormwater management and integrated water management projects

IWM opportunity name	Description	Actions	
		Short- to medium-term actions	Medium- to long-term actions
Best practice stormwater management	Implement best practice stormwater management in new developments. Apply water sensitive urban design principles and implement assets such as wetlands, retarding basins, vegetated swales to help treat and manage stormwater runoff.	– Align stormwater management approaches to East Gippsland Shire Council's stormwater management plan – Work with developers and other key stakeholders to integrate best practice stormwater management and water sensitive urban design principles into new developments such as Lenga – Map the capacity, suitability and location of existing infrastructure, particularly in the context of continued urban growth and integration with new infrastructure – Develop a plan for required upgrades and new stormwater management assets to optimise the stormwater system capacity	– Encourage and embed beyond-best-practice stormwater management approaches in new development – Identify priority project areas and areas that may require alternative stormwater management approaches
Reduce impervious surfaces	Reduce impervious surfaces (e.g. less pavement/hard surface area or implementing new technologies) in new developments and existing urban areas to reduce the volume of stormwater runoff.	– Explore opportunities for beyond business-as-usual stormwater management approaches to help reduce excess stormwater runoff and to provide multiple benefits (e.g. supporting broader liveability, waterway health, the natural environment and ecological values). Opportunities could include: • Harvesting stormwater for ecological values • Multi-functional stormwater assets • Nature-based solutions • Water for the environment • Reducing impervious surfaces – Identify priority locations for implementing interventions with multiple benefits (e.g. areas with high-ecological or community value)	– Planning, design and implementation of priority projects – Embed multifunctional and multi-benefit stormwater assets as part of a business-as-usual approach
Multi-functional assets	Design stormwater management assets (e.g. wetlands and basins) and public open space to provide multiple functions such as capacity to act as a basin or storage and treating stormwater runoff as well as providing green space or public amenity.		
Stormwater harvesting for ecological values	Capture stormwater and provide the water for ecological values, such as supporting waterways and the natural environment.		
Nature-based solutions and water for the environment	Implement solutions that use nature and natural processes and features to protect local ecosystems and to provide water for the environment.		
Ecological values in drainage lines	Protect and enhance drainage lines with high ecological values such as some of the vegetated drainage lines in Kalimna.	– Explore stormwater management and waterway rehabilitation opportunities to protect ecological values and create habitat, such as in the vegetated drainage lines in Kalimna	– Embed opportunities in future stormwater management and IWM projects

IWM opportunity name	Description	Actions	
		Short- to medium-term actions	Medium- to long-term actions
Focus Area 4 – Alternative water opportunities			
Explore alternative water opportunities such as recycled water supply, stormwater harvesting and rainwater harvesting	Supply end uses with alternative water (e.g. recycled water, captured stormwater or rainwater) as a fit-for-purpose supply to help reduce the reliance on drinking water and/or water drawn from the environment. Use alternative water supplies to also help reduce the reliance on climate-dependent water sources or to reduce the volume of stormwater runoff. Potential end uses could include non-drinking water in houses and gardens, public buildings and community facilities, industry/businesses, farm irrigation, irrigation of open/green spaces and recreation areas, car/boat washes. Consider opportunities for new developments, infill development as well as existing urban areas.	– Assess the feasibility of supplying alternative water, including: • Assess availability of alternative water supplies (e.g. supply source/s, volumes, water quality, locations) • Explore end use demands for alternative water and identify areas where alternative water sources can make the most difference • Explore infrastructure requirements and storage opportunities such as recommissioning existing assets, multi-functional assets, dedicated storages or other potential storages (e.g. aquifer storage and recovery) • Identify priority areas for recycled water supply and stormwater harvesting – Understand community and stakeholder perspectives and appetite for using alternative water sources – Understand stakeholder priorities (e.g. for large water users) – Support local-scale water saving and reuse	– Planning, design and implementation of priority projects – Ongoing exploration of alternative water opportunities
Smart rainwater tanks	Include rainwater tanks with smart technology in new developments or retrofitted for existing buildings (e.g. commercial areas or public buildings) to both provide an alternative water supply and to help manage stormwater runoff. Consider opportunities for large roof areas (e.g. commercial/industrial, public buildings, schools) as well as communal and individual tanks.	– Explore opportunities for and suitability of smart rainwater tanks – Review locations for smart rainwater tanks near existing drainage lines to enable a slow release of flows back to the environment	– Planning, design and implementation of identified projects

5. Implementation and Delivery

5.1 Implementation approach

The Lakes Entrance Integrated Water Management Plan is intended to be a practical guide for action. Delivering the four focus areas will require ongoing collaboration between agencies, Traditional Owners, community and other partners over many years.

Implementation will be guided by the principles set out in Section 1.5. The following sections set out how these principles will be applied through roles and responsibilities (Section 5.2), staging and timing (Section 5.3), an initial implementation roadmap (Section 5.4) and arrangements for monitoring and review (Section 5.5).

5.2 Roles and responsibilities

Delivering the Plan will involve many organisations working together, in line with the “collaborate and co-invest” principle. At a high level:

- EGW and EGSC are the primary custodians of the Plan and will coordinate implementation
 - EGSC will generally lead stormwater, drainage, planning and local open space initiatives (particularly under Focus Area 3 and parts of Focus Area 2 and 4)
 - EGW will generally lead potable water, wastewater and recycled water initiatives (particularly under Focus Area 4)
- GLaWAC is a key partner and leader, particularly under Focus Area 1 and where other focus areas intersect with cultural values and Country. GLaWAC’s involvement will be supported through agreed partnership arrangements, resourcing and early engagement in project design
- EGCMA, DEECA, Gippsland Ports, Parks Victoria and other State agencies will support implementation where it intersects with their statutory responsibilities and programs, especially in relation to waterways, coasts, public land, emergency management and climate adaptation
- Community, business and industry partners will be involved through Focus Area 2, contributing local knowledge, supporting behaviour change and, in some cases, co-investing in local initiatives (e.g. alternative water schemes or stewardship projects)

To support coordination, EGW and EGSC will work with key stakeholders such as the Integrated Water Management Implementation Practitioners Group for Lakes Entrance and surrounds. This group would:

- Meet regularly to review progress, share information and coordinate funding bids
- Include representation from EGW, EGSC, GLaWAC, EGCMA, DEECA and other relevant partners
- Provide advice on priorities, resourcing and opportunities to integrate projects or programs

5.3 Staging and timing

The actions in this Plan will not all occur at once. Instead, they will be staged across two indicative timeframes, consistent with planning for climate resilience, whole-of-system change and available resources:

- **Short to medium term (0–5 years)** – foundation work and “no-regrets” actions that set up longer-term outcomes. This includes initial feasibility studies, planning, partnership frameworks, key investigations, and initial education and engagement activities
- **Medium to long term (5–15+ years)** – rollout of priority infrastructure and programs, such as targeted stormwater upgrades, initial alternative water schemes, expanded community programs and Traditional Owner-led on-Country projects

These timeframes are indicative and will be refined through business planning processes and funding opportunities. Some actions may progress faster if funding becomes available, while others may be staged over a

longer period to align with asset renewal or development cycles. Some initiatives and actions will also need to be refined and updated in future.

5.4 Implementation Roadmap

Table 3 provides an initial implementation roadmap, summarising the key early streams of work for each focus area. It is not exhaustive but gives a clear sense of “who does what, and when”, and shows how the focus areas are translated into practical steps. More detailed project plans and business cases will be developed by the relevant lead agencies as the Plan moves into delivery.

This roadmap will be refined through ongoing discussions among partners and through integration with organisational business plans, capital works programs and funding opportunities.

Table 3 *Initial Implementation Roadmap*

Focus Area	Early priorities (short- to medium-term actions)	Indicative lead and key partners
Focus Area 1 – Supporting Traditional Owner outcomes and water values	Co-design a partnership framework for integrated water management with GLaWAC, including agreed principles, roles and resourcing. Identify early GLaWAC-led cultural water projects that can align with Focus Areas 2–4. Build Traditional Owner engagement into the design of stormwater, alternative water and community initiatives from the outset.	Lead: GLaWAC (in partnership) Key partners: EGW, EGSC, EGCMA, DEECA, Gippsland Ports, Parks Victoria
Focus Area 2 – Community education and engagement in integrated water management	Develop a Lakes Entrance integrated water management communication and education plan. Establish a simple information hub and initial materials (e.g. diagrams, stories, signage) to explain the local water system and integrated water management concepts. Run early engagement activities to share the Plan.	Leads: EGSC (community engagement), EGW (water services information) Key partners: GLaWAC, EGCMA, schools, community groups, developers, business and tourism operators
Focus Area 3 – Understanding and managing stormwater	Assess opportunities to improve stormwater management approaches and identify priority projects to take forward for further assessment, planning and design. Work with developers and other stakeholders to integrate best practice stormwater management and integrated water management principles. Explore opportunities for beyond business-as-usual stormwater management approaches to help reduce excess stormwater runoff and to provide multiple benefits (e.g. supporting broader liveability, waterway health, the natural environment and ecological values).	Lead: EGSC Key partners: EGW, EGCMA, DEECA, GLaWAC, developers, community
Focus Area 4 – Alternative water opportunities	Explore the feasibility of supplying alternative water including assessing the alternative water supplies and demands and high-level infrastructure requirements. Identify priority projects where alternative water sources can make the most difference. Understand community and stakeholder priorities, perspectives and appetite for using alternative water sources.	Lead: EGW (strategy, recycled water, demand assessment); co-lead: EGSC (stormwater harvesting, open space) Key partners: GLaWAC, EGCMA, DEECA, EPA Victoria, major users, community

5.5 Monitoring, reporting and review

To keep the Plan relevant and effective over time, progress will be monitored and reported. The Plan itself will be reviewed periodically, in line with the guiding principles of planning for climate resilience, thinking in whole-of-system terms and learning as we go.

Monitoring and reporting will focus on:

- **Implementation progress** – whether key steps in the roadmap are being delivered (for example, completion of studies, establishment of partnership frameworks, delivery of early works)
- **Outcomes and performance** – changes in water use, stormwater quality, flood risk, community awareness and participation, and Traditional Owner involvement, as data becomes available
- **Learning and adaptation** – what is working well, what needs adjustment, and how lessons from early projects can be applied to future initiatives

A simple reporting mechanism (for example, an annual or biannual implementation update to the Integrated Water Management Implementation Working Group, partners and the community) can help keep momentum and transparency.

The Plan itself is intended to be a living document. It is expected that:

- A high-level review will occur every few years to confirm priorities, update the actions and implementation roadmap and incorporate new information
- A more comprehensive review may be undertaken at key milestones (for example, every 5–7 years, or aligned with major strategy updates or funding rounds)

Through these arrangements, and by continuing to apply the guiding principles from Section 1.5, the Lakes Entrance Integrated Water Management Plan can continue to guide decision-making and investment while remaining flexible enough to respond to new challenges, opportunities and community aspirations over time.

5.6 Funding and resourcing

This Plan is intended to guide future investment and support funding applications and business cases.

Responsibility for funding will broadly follow each organisation's core roles and functions. EGW and EGSC will fund and deliver actions that sit within their service responsibilities, drawing on operating budgets, capital works programs and external funding where appropriate.

GLaWAC, EGCMA, DEECA and other State agencies will contribute to actions where these align with their statutory roles and program areas and may seek State or Australian Government funding to support eligible projects.

For many initiatives, particularly those that deliver shared benefits, costs are expected to be shared. Partnership approaches and co-investment will be explored for projects such as alternative water schemes, on-Country works and community programs that support cultural, environmental and liveability outcomes.

The Lakes Entrance Integrated Water Management Plan will be used as:

- A strategic reference when organisations prepare corporate plans, capital works programs and grant applications
- A common evidence base – particularly through the technical work in Part 2 – to support robust business cases and prioritisation
- A coordination tool to help partners align investment decisions and timing, and to demonstrate integrated outcomes to external funders

More detailed cost estimates and funding arrangements will be developed at the project level as initiatives under each focus area move into feasibility, design and delivery.

