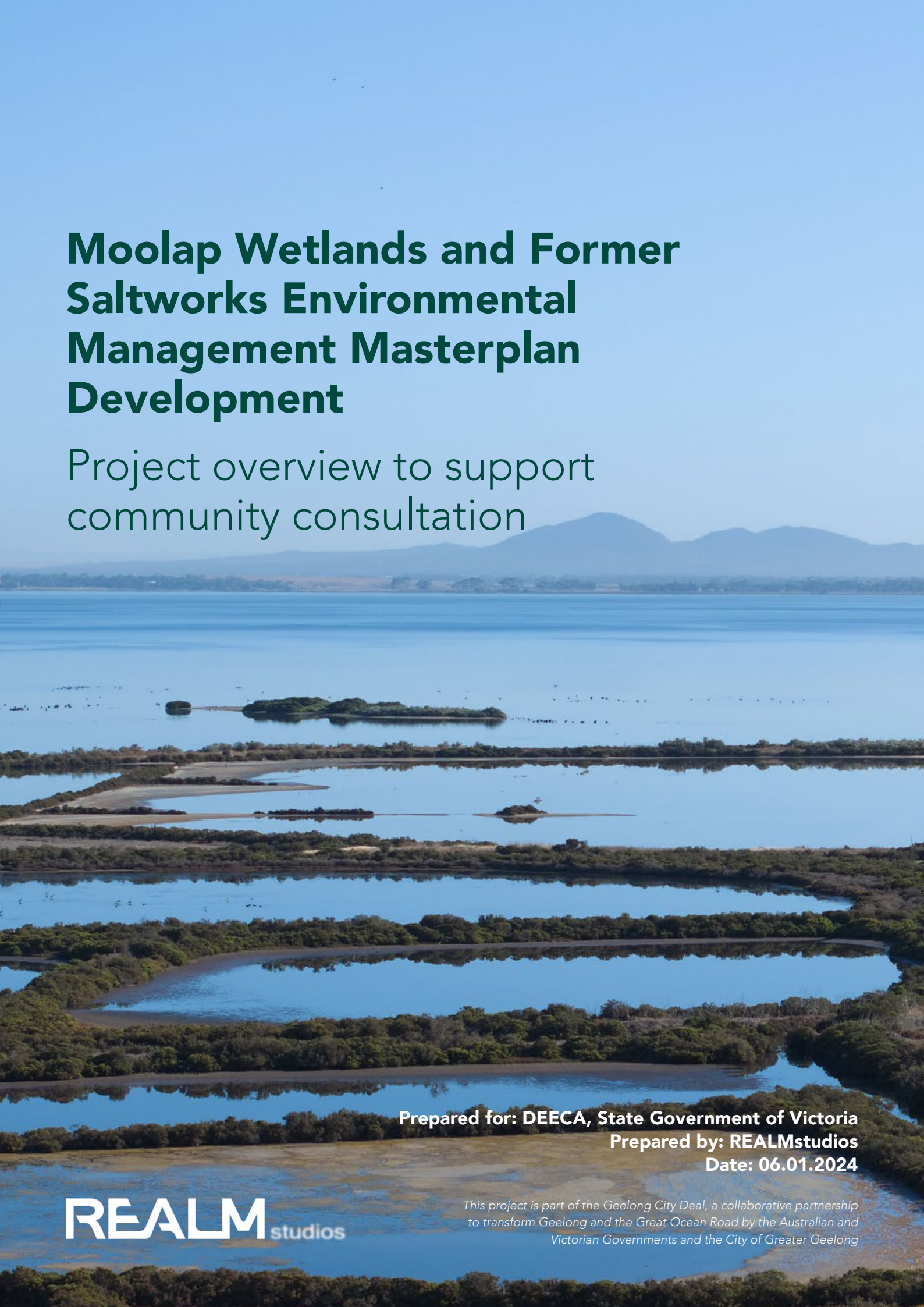
Moolap Wetlands and Former Saltworks Environmental Management Masterplan Development

Project overview to support community consultation



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REALM studios

This project is part of the Geelong City Deal, a collaborative partnership to transform Geelong and the Great Ocean Road by the Australian and Victorian Governments and the City of Greater Geelong

THE PROJECT

The Moolap Wetlands and Former Saltworks is a significant coastal landscape located just minutes from central Geelong. With the closure of major industrial operations in the area, including the Cheetham Saltworks and Alcoa's Point Henry plant, the Victorian Government developed the Moolap Coastal Strategic Framework Plan in 2019 to guide the future of this region.

The Moolap Coastal Strategic Framework Plan divides the broader Moolap area into four distinct yet interconnected precincts. Among these, the Wetlands and Former Saltworks Precinct is celebrated for its exceptional environmental and heritage values. This precinct features extensive wetland systems that serve as critical habitats for migratory birds protected under international agreements. Additionally, it reflects Geelong's industrial heritage through the preserved infrastructure of the former saltworks.

The next step in shaping the future of the wetlands and former saltworks is the creation of a detailed Environmental Management Masterplan (EMM). This comprehensive blueprint aims to:

- Respond to existing heritage, cultural and environmental values, while ensuring it can be managed and enjoyed sustainably into the future.
- Support the aspirations of Wadawurrung Traditional Owners to care for this part of Country.
- Identify what areas need protection.
- Prepare for challenges including rising sea level and flooding.
- Protect important cultural and heritage sites.
- Explore opportunities for compatible activities like tourism, education and research that can help more people understand and appreciate the area.
- Identify what facilities and infrastructure might be appropriate.
- Ensure proper long-term management of the area.

This is distilled into three objectives to guide the development of the EMM.

- **Objective 1:** Coordinate a well-managed environment.
- **Objective 2:** Prioritise environmental outcomes by responding to existing values and risks.
- **Objective 3:** Enable required infrastructure and service utilities, and where it complements environmental management and conditions, encourage ancillary activities including tourism.

The project team is working closely with the Wadawurrung People, whose connection to this land spans thousands of years. Their profound knowledge and cultural values are integral to shaping the future care of this special place.

The masterplan will outline which areas require protection, propose suitable facilities and infrastructure, and establish sustainable management practices. While prioritizing environmental preservation, it will also explore opportunities for compatible activities such as tourism, education, and research—helping more people understand and appreciate the significance of the wetlands.

Through careful and inclusive planning, the Moolap Wetlands and Former Saltworks can remain a cherished place for Geelong—a sanctuary where nature thrives, history is honoured, and people can connect with the region's rich environment and heritage.

The Study Area - Moolap Wetlands and Former Saltworks

The Moolap Environmental Management Masterplan needs to guide the long-term future of the Moolap Wetlands and Former Saltworks area. To do so, it needs to balance the heritage and environmental values of the site with changing coastal conditions expected to impact the site from 2040 through to 2100.

UNDERSTANDING THE SITE
HISTORICAL CONTEXT

The Moolap Wetlands and former Saltworks are situated on the doorstep to a rapidly growing Geelong to the east and a gateway to the broader Bellarine Peninsula to the west.

The site offers a refuge to a myriad bird species, a refuge that interfaces between salt and fresh water, between sea and land, between the sky and the ground.

First contact between the Wadawurrung and Europeans was in 1802 when Lieutenant John Murray entered the Bay. This began a long period of dispossession for the Wadawurrung as they were forced off their lands in the face of colonial development. The peninsula was an ideal location for sealers and whalers to establish camps and pastoral leases were granted across the area, removing access to traditional food and water supplies and severely impacting on Wadawurrung people to continue caring and resourcing their traditional foods and medicines.

Upon European settlement, Point Henry became a key disembarkation point for settlers, goods, and livestock arriving in Geelong. By the 19th century, tourism flourished in the area, transforming Point Henry into a hub of leisure activities such as sailing and horse racing. The development of tea gardens, hotels, and a jetty enhanced its appeal, with steamers ferrying visitors to Swiss-style chalets built to accommodate the growing demand.

However, an economic depression in the late 19th century marked a shift from tourism to industry. In 1888, the Cheetham Saltworks was established, leading to the conversion of samphire flats into salt pans. This significant transformation of the landscape, while industrial, attracted shorebirds to the varying depths of the salt pans, creating an unintended ecological benefit.

The area's industrial trajectory continued into the 1960s with the construction of Alcoa's aluminium smelter, completing Point Henry's transition from a bustling tourist destination to a centre of industry.

In 1924 Cheetham's land was declared a wildlife sanctuary, since this time the site has been managed in a delicate balance between environment and industrial heritage values. Birdlife and wildlife have flourished in the salt pans providing a sanctuary at the doorstep to Geelong.

45,000 years of Wadawurrung history

This area was known as 'moo-laa' which was corrupted to Moolap and meant 'men gathering to go fishing'. It is believed the area was inhabited by Bengalat balug (Clan) of the Wadawurrung Tribe. The site holds significance for the Wadawurrung as an historical meeting place, due to its proximity to Corio Bay, as a source of fresh water, and for hunting and fishing.

WILLIAM DUKE, GEELONG FROM MR, HIATT'S BARRABOOL HILLS 1851

GEELONG HERITAGE CENTRE

Immigrants arriving at Point Henry in 1853, having to wade ashore and walk or ride to Geelong due to the sand bar blocking access to Geelong harbour at low tide.

They were primarily farmers and pastoralists who began to cultivate the land for agriculture and graze livestock. The fertile soil and proximity to the coast made it an attractive area for farming and other rural activities.

Richard Cheetham established the first successful salt works for Australia in Geelong, Victoria in 1888. The salt field started to produce within a few years and the company established markets to sell its products.

SALT PANS MOOLAP

Photo: John Young Collection

MOOLAP STATE SCHOOL NO. 1143 OPENED 1871

GLASSMETAL INDUSTRIES FRANCIS NEWBERRY FOUNDED THE VICTORIA FOUNDRY AND ENAMELLING WORKS IN 1890.

1900s

Ground was officially broken for construction on 14 December, 1961 by Victorian Premier Sir Henry Bolte with an official party including first Alcoa of Australia chairman Sir Lindesay Clark. The first molten metal was poured on 17 April, 1963. After 51 years of operation, Alcoa closed its Point Henry operations. The smelter ceased operation on 1 August, 2014 and the rolling mill closed on 19 December, 2014.

In the mid-20th century, Moolap saw some industrial development, including the establishment of factories and warehouses. This contributed to the local economy and provided employment opportunities for residents.

2024

Today, Moolap is a mix of residential, industrial, and rural areas. It is known for its coastal location, with beaches and recreational areas attracting visitors and residents alike. The suburb continues to evolve, with ongoing developments in infrastructure, housing, and community amenities.

The closure has led to changes in the area, including discussions about redevelopment, land use planning, and environmental rehabilitation of former industrial sites. Including the development of a broader masterplan

UNDERSTANDING THE SITE
SEA-LEVEL RISE

Planning for the future

Climate change presents significant risk to values of the Moolap Wetlands and former Saltworks site.

Expected hazards include rising sea levels, increased convective storms, and shifting temperature and rainfall patterns. These hazards threaten critical ecosystems, infrastructure, and essential services in the area, leading to challenges such as water scarcity, flooding, and salinization.

Understanding future climate scenarios is crucial for making informed decisions about the site's management and development.

These adjacent maps show how rising sea levels and flooding could affect the Moolap Wetlands area in 2040 and 2100. The blue areas show where water is likely to cover the land during high tides and storms.

2040 Scenario

- The former saltworks and low-lying wetland areas will experience regular flooding.
- Water will begin to affect areas around Point Henry Road.
- Some coastal vegetation may be impacted.
- Bird habitats will start shifting as water levels change.

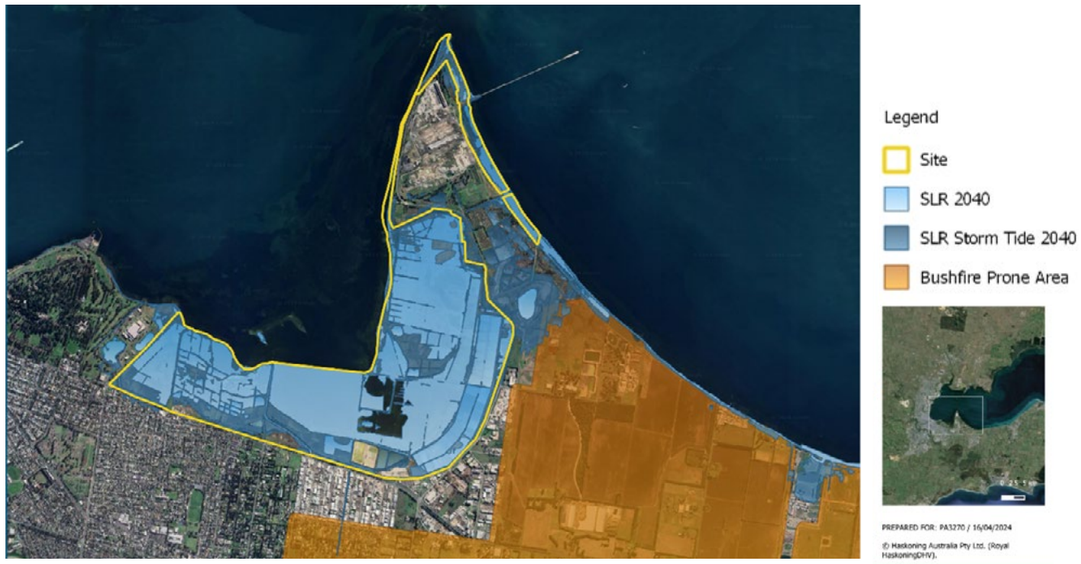
2100 Scenario

- Much larger areas will be permanently under water.
- Flooding will extend further inland.
- Major changes to the shoreline and wetland areas.
- Parts of Point Henry Road may be regularly flooded.
- Significant changes to wildlife habitats and coastal ecosystems.

What does this mean for the future?

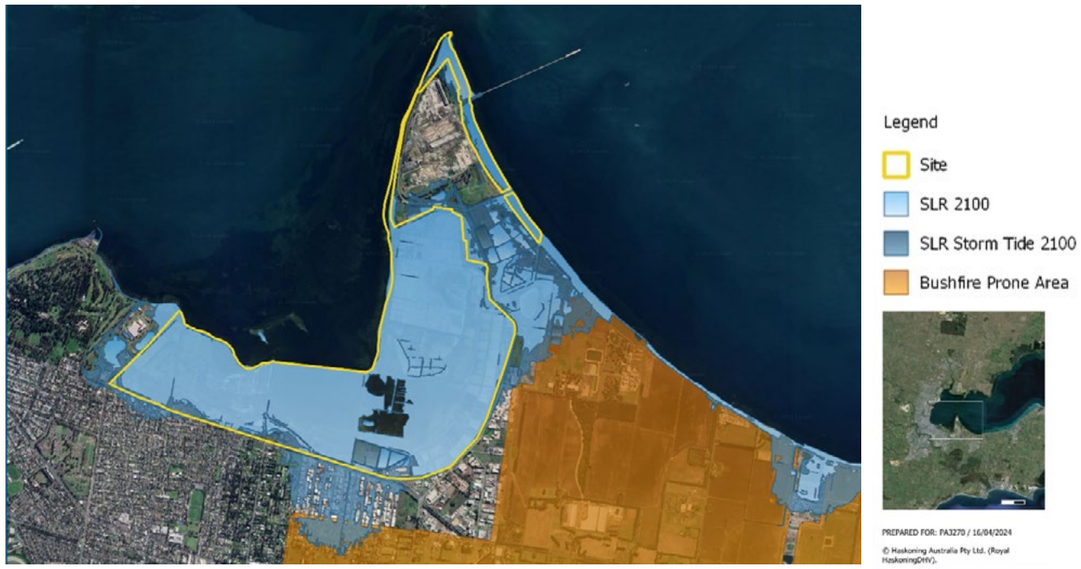
These changes will affect how we can use and manage the area. We'll need to:

- Plan carefully for where we may put new infrastructure.
- Protect important habitats for birds and other wildlife.
- Consider how people can continue to access and enjoy the area safely.
- Allow natural processes to occur in some areas while protecting critical assets in others.



Regular tidal inundation extent 2040 (with Sea Level Rise) and Storm tide inundation extent 2040 (with Sea Level Rise and 1% Annual Exceedance Probability storm event)

Modelling data from Port Phillip Bay Coastal Hazard Assessment (DEECA, 2023)



Regular tidal inundation extent 2100 (with Sea Level Rise) and Storm tide inundation extent 2100 (with Sea Level Rise and 1% Annual Exceedance Probability storm event)

Modelling data from Port Phillip Bay Coastal Hazard Assessment (DEECA, 2023)

VALUES AND CONSTRAINTS
HOW DO WE VALUE THE SITE?

Critical bird habitat

The wetlands serve as an internationally significant habitat for migratory shorebirds that undertake remarkable journeys along the East Asian-Australasian Flyway. These birds travel thousands of kilometres from breeding grounds as far away as Siberia to reach the Victorian coast. The site's unique combination of shallow waters, mud flats, and raised banks—a legacy of its past salt production—provides essential feeding and roosting areas for these remarkable creatures. The location and physical form of the site makes it particularly valuable, offering birds the peace and security they need during their stay in Australia.

Vegetation and ecosystems

Despite its industrial past, the site supports important native plant communities. These plants help stabilise the coast, provide habitat for wildlife, and support the area's unique ecology. The former saltworks have shaped these ecosystems, creating special niches. Nearby, seagrass meadows in the marine environment play a key role: they stabilise the sea floor, clean the water, store carbon, and provide habitat for fish and other marine life. Together, the wetlands and seagrass meadows form a rich ecological zone, supporting diverse marine and coastal species.

Water management

A network of channels drain water from the study area and upstream communities of Moolap and Newcomb. These channels help to mitigate flooding in these communities. These canals with their vegetated banks also act as natural filters, helping to manage and clean stormwater before it enters Corio Bay. The complex network of channels, ponds, and vegetation helps slow water flow, trap sediments, and filter pollutants. This natural infrastructure plays a vital role in maintaining the health of both the immediate environment and the broader bay ecosystem.

Wadawurrung cultural significance

The Wadawurrung People maintain profound connections to this Country from 45,000 years of care and custodianship. Their deep understanding of the landscape, its seasonal patterns, and its resources represents thousands of years of accumulated knowledge and cultural practice. There are significant Wadawurrung tangible and intangible cultural heritage values on the site that need to be recognised, conserved and protected.

Industrial heritage legacy

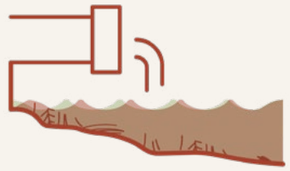
The former Cheetham Saltworks, listed on the Victorian Heritage Register, showcases Victoria's industrial innovation. As the state's first successful solar saltworks, it represents significant progress in early industrial processes. The remaining infrastructure, including the geometric layout of salt pans, banks, and sluices, tells a fascinating story of this pioneering site.

Coastal hazards

Climate change is the biggest long-term challenge for the site. Rising sea levels, expected to increase by at least 0.8 metres by 2100, could cause permanent flooding, changes to water flow and salinity, loss of bird habitats, damage to cultural heritage, more severe storm surges, and the evolution and migration of vegetation and ecosystems.

Stormwater quality and catchment flooding

Managing water quality and drainage is an ongoing challenge for the study area and upstream communities in Moolap and Newcomb. Stormwater from urban catchments impacts water quality in the study area and the Bay. These issues are predicted to worsen as sea levels rise. Flood mitigation is required to protect environmental values and established communities and to align with regional water management plans and contemporary best practice.



Contamination and ground conditions

The site's coastal geology and industrial history have generated environmental challenges that need careful management. These include contaminated land, acid sulfate soils, expansive clay soils and potential groundwater contamination. These complex ground conditions present challenges to people and the environment especially when disturbed and may affect future uses.

Balancing access

Issues like vandalism, rubbish dumping, and trespassing are current issues that will be considered as a part of the EMM. Human activity can disturb sensitive wildlife, especially migratory birds. Future access, supporting infrastructure, education and recreational opportunities will require careful planning to ensure all future site use is well designed and appropriately located.

Managing pests and weeds

Weed invasion and pests can impact vegetation, habitat and cultural values. There may be opportunities for eradication of some species otherwise ongoing management will be required to protect the study areas values.

SCENARIOS
HOW DO WE MANAGE THE SITE VALUES?

Site activation and future uses for the EMM are being considered initially through exploring different scenarios as examples.

This includes active management of the current site uses, through to activating greater public access and other uses.

All scenarios aim to create a resilient site that can adapt to change over time. Each scenario offers different approaches and levels of site activation with a view to:

- Protect and enhance important flora and fauna.
- Care for cultural and heritage values.
- Manage stormwater and catchment flooding.
- Adapt to rising sea levels.
- Control site contamination and ground conditions.
- Balance public access with environmental protection.
- Identify suitable areas for complimentary land uses.

Initial example scenarios for consideration

1. Active management
Focuses on improving existing values through targeted interventions, habitat protection, and existing controlled access. Future management facilitates habitat migration as environmental conditions evolve.

2. Active management and activated edge
Concentrates development and activities along the site's boundaries to preserve core ecological areas. Stormwater and habitat buffers act as natural barriers against risks. Active management strategies adapt to long-term changes.

3. Active management and integrated activation
Combines habitat protection with infrastructure integration, and more extensive site access. Fosters a resilient, multi-functional landscape. Active management strategies adapt to long-term changes.

Example scenario 1: Active management

This scenario focuses on improving existing values through targeted interventions, habitat protection, and maintaining existing levels of controlled access. Future management facilitates habitat migration as environmental conditions evolve.

Key elements of this scenario include:

- No change to current limited public access to protect wildlife.
- Active management to enhance existing natural values.
- As sea levels rise, natural habitats would be allowed to shift and change.

By 2040

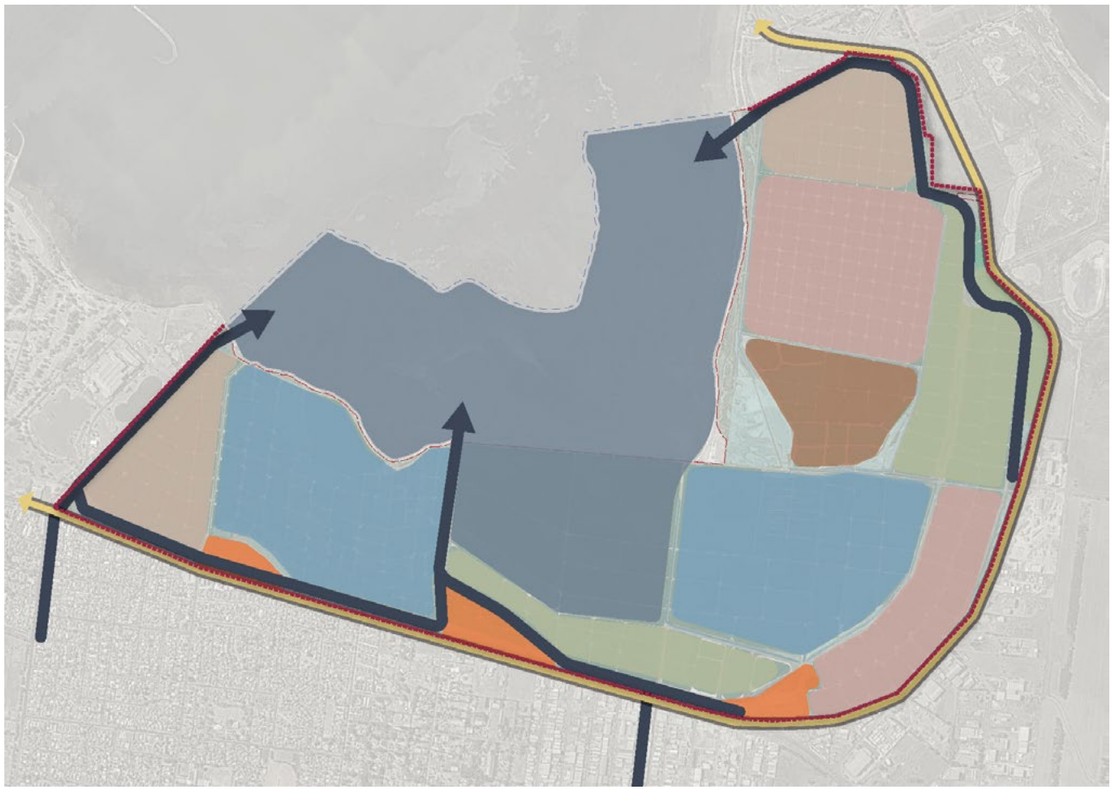
There would be no substantial change to the current limited public access to protect wildlife, while actively aiming to enhance natural values. The focus is on improving conditions for wildlife and natural systems, with areas outside the wetlands managed separately.

2040 to 2070

As sea levels rise, habitats are actively managed to support their migration to new areas within the Precinct. Some habitats would transition to marine habitats as sea levels rise. Site management would support new habitat types as they emerge. Dynamic environmental management would help nature adapt to these changes over time.

2070 to 2100

By 2100, most of the current landscape would be transformed into new types of wetlands and marine environments. Site management would continue to support wildlife in these changed conditions, with the focus shifting to protecting and enhancing the new environmental values that will emerge.



Example scenario 1: Active management
Focuses on improving existing values through targeted interventions, habitat protection, and existing controlled access. Future management facilitates habitat migration as environmental conditions evolve.

Example scenario 2:

Active management and activated edge

This scenario concentrates development and access / activities along the site's boundaries to preserve core ecological areas. Stormwater and habitat buffers act as natural barriers against risks. Active management strategies adapt to long-term changes.

Key elements of this scenario include:

- Paths around the edges including a potential new walking and cycling path between central Geelong and Point Henry.
- Natural based solutions such as wetlands and biofilters to manage stormwater and create buffer zones near southern and eastern boundaries of site.
- Adaptation to rising sea levels by allowing most of the site to naturally respond to changes.
- Consideration of complimentary land uses around the edges where no high natural values.
- By 2100: Consideration of upgrading infrastructure around the edges to address nearby flooding impacts.

By 2040

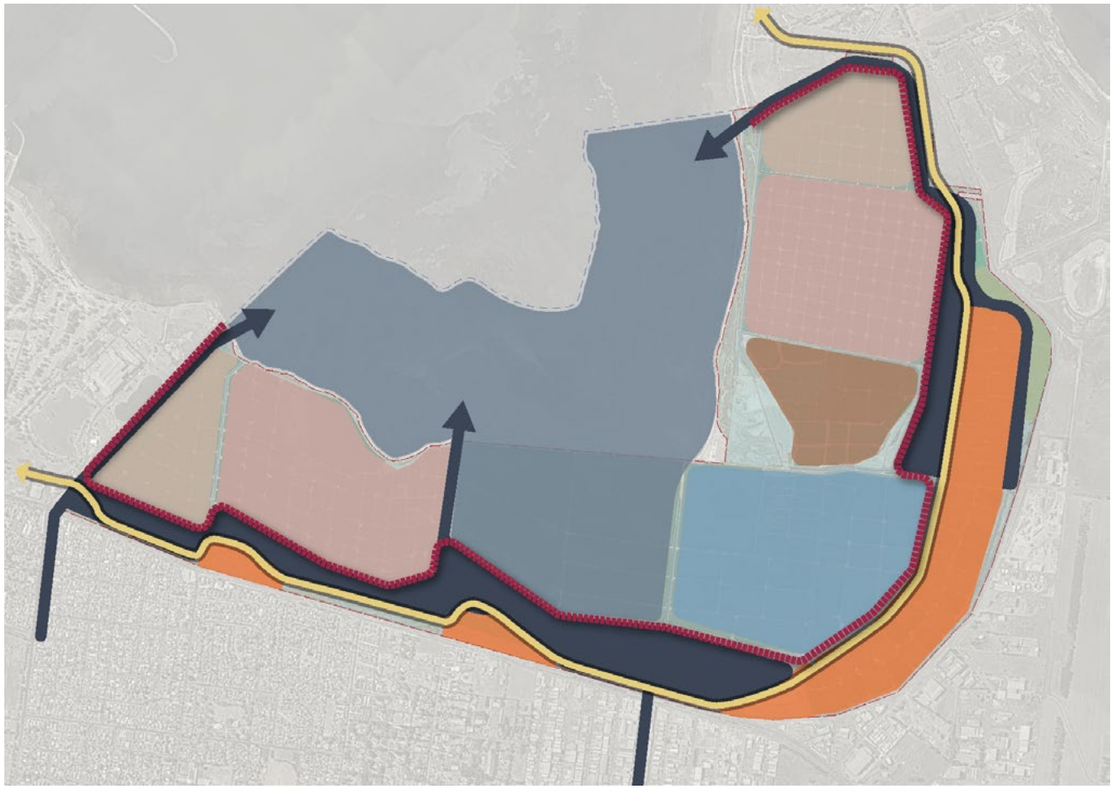
People would experience the wetlands from paths around the edges, including a new walking and cycling path between central Geelong and Point Henry. Stormwater management along the edges would create buffer zones, while core wetland areas would be protected for wildlife.

2040 to 2070

Nature based solutions such as wetlands and biofilters would help manage impacts of rising sea levels. While some existing values would change as water levels rise, new habitats would be encouraged. Environmental management that responds to changing conditions, with minimal physical intervention would help reduce flooding impacts on nearby areas. Cultural values would be documented and protected, where possible.

2070 to 2100

Infrastructure around the edges would be reviewed and possibly upgraded with new facilities designed to cope with changing conditions such as rising sea levels and increased stormwater flooding. The site would support different wetland environments, with edge treatments helping to address flooding impacts on nearby areas.



Example scenario 2: Active management and activated edge

Concentrates development and activities along the site's boundaries to preserve core ecological areas. Stormwater and habitat buffers act as natural barriers against risks. Active management strategies adapt to long-term changes.

Example scenario 3:

Active management and integrated activation

This scenario combines habitat protection with infrastructure integration, and more extensive site access. Fosters a resilient, multi-functional landscape. Active management strategies adapt to long-term changes.

Key elements of this scenario include:

- Specific areas where people can experience the wetlands.
- Paths through the site including a potential new walking and cycling path between central Geelong and Point Henry
- Integrated stormwater management with wildlife habitat.
- Protection of sensitive areas.
- Natural adaptation approaches.
- Consideration of complimentary land uses in areas where there are no high natural values.
- By 2100: Some facilities might need to be moved as sea levels rise.

By 2040

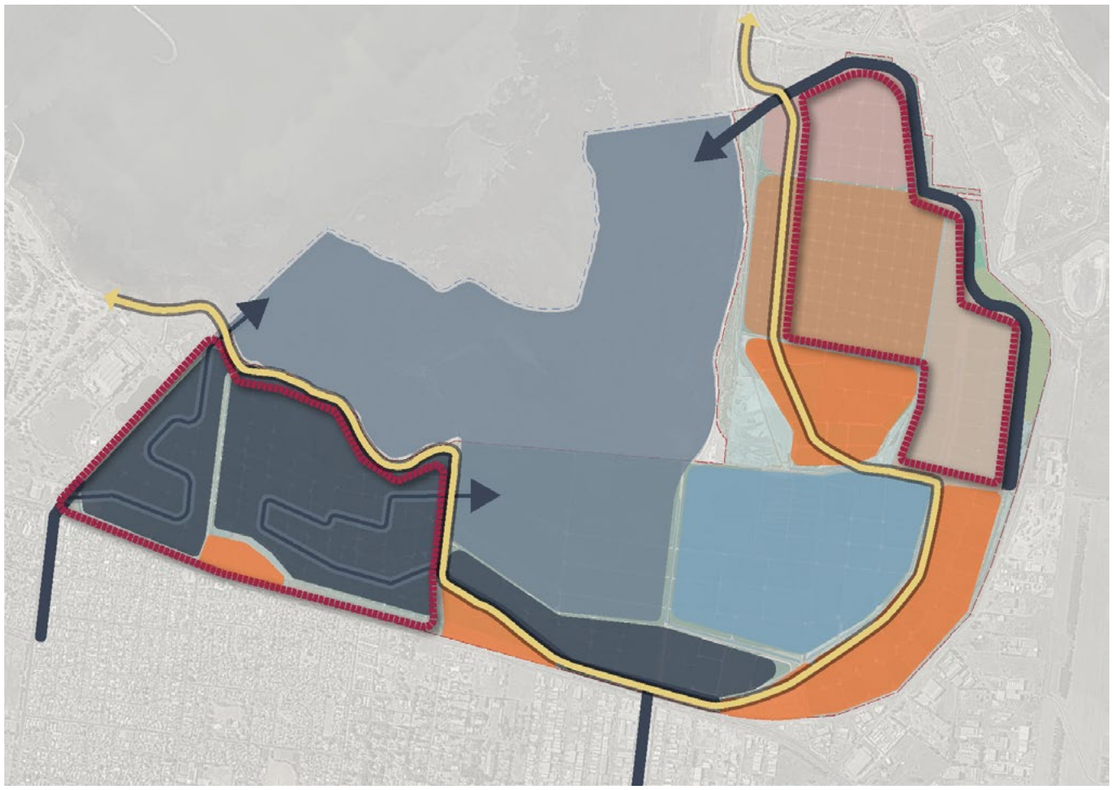
There would be specific areas where people could experience the wetlands with carefully planned paths. Sensitive bird habitats would be protected with management focused on strengthening habitat resilience. Stormwater management would be integrated with wildlife habitats. Stormwater would be managed and balanced with salt water to provide bird habitats with a more resilient water supply.

2040 to 2070

Adaptation approaches would help habitats adapt to rising sea levels. As some values change and new ones emerge, environmental management would enhance old and new habitats. Site features would help reduce flooding impacts on nearby areas. Cultural values would be carefully documented and protected, where possible.

2070 to 2100

Some public facilities would need to be moved due to rising sea levels. The site would support new wetland environments, with management focusing on enhancing new habitat values. Regular reviews would ensure the implemented approaches are still working effectively.



Example scenario 3: Active management and integrated activation
Combines habitat protection with infrastructure integration, fostering a resilient, multi-functional landscape. Active management strategies adapt to long-term changes.

NEXT STEPS

The EMM will progress through 2025 into 2026. Along this journey there will be further feasibility assessments, economic analysis, ongoing stakeholder engagement and community engagement.

The process is intended to be iterative and thorough so that there are multiple opportunities for people to be heard and information gathered to inform the EMM outcomes. Below is a brief timeline showing the next steps in the project.

NOW

ENGAGEMENT

Gain an understanding of the values that the community hold for the site, and feedback on example scenarios, via an online survey and 2 open house / drop in sessions.

NEXT

COST BENEFIT ANALYSIS

The example scenarios and options for the site will be refined further following this community engagement. This includes feasibility assessments including costs and benefits to help determine a preferred masterplan approach that maximises community, environmental and economic outcomes over time.

DRAFT EMM

Incorporating community input and feedback on the site values and example scenarios, and outcomes from the feasibility and options assessments, the draft EMM will be developed.

ENGAGEMENT

Community feedback on the draft EMM via a second online survey and 2 open house / drop in sessions.

DEVELOPMENT OF FINAL EMM

Community feedback on the draft plan will be incorporated to refine the final EMM.

Diagram illustrating Moolap Wetlands Environmental Management Masterplan delivery process

REALM studios

city making + liveability

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