Adapt West - Shaping our Shores

Factsheet 2: May 2025 project update

We are continuing work to develop a strategic plan to manage coastal hazards and build resilience for the Port Phillip Bay western shoreline.

Work to date

The Port Phillip Bay western shoreline Regional and Strategic Partnership (RaSP) has been progressing work for the Adapt West – Shaping our Shores project. We've completed Stage 2 and are progressing with Stages 3 and 4 (Figure 1).

Stage 1	Scoping and preparation
Stage 2	Values, vision and objectives
Stage 3	Coastal hazard exposure
Stage 4	Vulnerability and risk
Stage 5	Adaptation actions and pathways
Stage 6	Plan and implement
Stage 7	Ongoing monitoring and review

Figure 1. Victoria's Resilient Coast framework stages

See Factsheet #1 for details of the project stages.

Document library

Read more about the project in these documents:

Factsheets:	#1 Project overview #2 May 2025 project update (this document)
Engagement updates:	#1 Stage 2 Values and experiences
Values studies:	Community and Social Values Study Ecological Values Assessment Cultural values studies (internal only)
Summary reports:	Stage 2 Summary report Stage 3 Summary report

Available on the project website:

engage.vic.gov.au/adapt-west or Adapt West - Shaping our Shores

Stage 2: Values, vision and objectives

Purpose: Ensure coastal adaptation planning is underpinned by place-based values.

Work in this stage has included:

- Three tailored values studies:
  - Community and Social Values Study.
  - Ecological Values Assessment.
  - Cultural Values Studies.
- A Stage 2 summary report, including:
  - Key values and five adaptation objectives.
  - A Strategic Vision Direction Statement.

Adapt West Strategic Vision Direction Statement:

Resilient, healthy, and functioning coastal ecosystems and liveable, connected communities that are adaptable and prepared for coastal change through collaborative, well-informed, sustainable and coordinated adaptation.

Read more about the Stage 2 work in the **Stage 2 Summary report** and **engagement summary.** See the document library to read more.

Outcomes from Stage 2 are embedded in adaptation planning through all future stages and ensure adaptation supports place-based values for the Adapt West region.

RaSP Partners at Limeburners Bay. Credit: Alluvium

June 2014 flood at Altona Esplanade. Source: VicSES

Stage 3: Coastal hazard exposure

Purpose: assess coastal hazard exposure for the study area.

Work in this stage has included:

- Reviewing and refining outputs from the Port Phillip Bay Coastal Hazard Assessment (PPBCHA).
- Confirming the hazard types and scenarios we'll use in the risk and vulnerability analysis (Stage 4).
- A Stage 3 summary report.

Read more about coastal hazards and the Stage 3 work in the **Stage 3 Summary report**. See the document library to read more.

The Port Phillip Bay Coastal Hazard Assessment website also has a range of information and summary reports:

marineandcoasts.vic.gov.au/coastal-programs/port-phillip-bay-coastal-hazard-assessment

Understanding coastal hazards

Natural marine and coastal processes include many complex, changing and connected actions. Drivers of change such as wind, waves and tides work to move water and sand. These processes shape the shoreline and adjacent coastal land.

When these natural coastal processes interact with the ways we use, value or enjoy the coast, they become **coastal hazards** (Table 1).

For Adapt West, priority regional scale hazards include coastal flooding (inundation) and sand movement through erosion (sand loss/retreat), as well as changes in groundwater (saline intrusion). Other localised hazards (including accretion) will also be considered through place based adaptation actions.

Table 1. Coastal hazard definitions for Victoria.

Category	Process / hazard
Erosion	**Short-term erosion** Event-based erosion of sediment (storm-bite) and recovery **Long-term erosion** (recession) Progressive retreat of shoreline position over time
Accretion	Short- or long-term build-up of sediment in a localised area
Inundation	**Storm tide inundation** Temporary event-based inundation **Permanent inundation** Regular or persistent inundation by the regular tidal cycle
Estuary dynamics	Changes in form and processes associated with estuarine and tidal areas
Off-shore sediment dynamics	Changes in form and processes associated with offshore bathymetry and sediment transport
Saline intrusion	Movement of saltwater into freshwater aquifers/groundwater

Beach erosion and degrading protection at Campbells Cove. Source: DEECA

Accretion and estuary dynamics at Laverton Spit. Source: Alluvium.

Regional coastal hazard descriptions

Permanent inundation

Regular or persistent inundation by the regular tidal cycle. Occurs when low-lying areas are regularly flooded due to tidal processes.

Low lying areas prone to increasing tidal inundation include wetlands around Jawbone, Altona, the Western Treatment Plant and Avalon.

Storm tide inundation

Caused by a combination of predicted tides, storm-surges, and high wave action during severe storm events. Results in elevated water levels (storm surge), wave setup and wave runup, causing overtopping (e.g. of a dune or seawall) and inundation.

Areas which currently experience storm tide inundation include Jawbone Flora and Fauna Reserve, Altona Coastal Reserve, Altona foreshore, Altona Meadows, Avalon Coastal Reserve and other wetland areas. These areas will expand in area and may see more frequent flooding.

Short and long term erosion

Erosion which can be event-based (storm-bite) and then recover or be longer term retreat. Erosion affects sandy shores as well as low earth, soft rock and hard rock cliffs.

On sandy shores such as Altona, Williamstown and Werribee South beaches sand moves offshore during a storm and gradually recovers between storm events.

In earthen and rocky coasts around Williamstown, Kirk Point, and Point Wilson, drainage, weathering, undercutting and rock falls/slips also influence erosion.

Changes in groundwater

Rising sea levels may result in movement of seawater inland. This includes elevated groundwater and increases in salt water. Groundwater could become higher (closer to the surface) near the sea and be saltier. This can reduce drainage capacity and impact on uses of groundwater for agricultural purposes, particularly around Werribee.

The Stage 3 Summary report and PPBCHA website provide more information about coastal hazards.

Stage 4: Vulnerability and risk

Purpose: Explore place-based coastal hazard vulnerability and risk to values and assets to enable strategic consideration of adaptation needs and priorities across the region.

Figure 2This stage includes a vulnerability and risk assessment that (Figure 2):

- considers which values, uses and assets might be exposed to coastal hazards,
- for which hazard types and in which scenarios,
- what the consequence of that exposure might be, and
- informs adaptation planning in Stage 5.

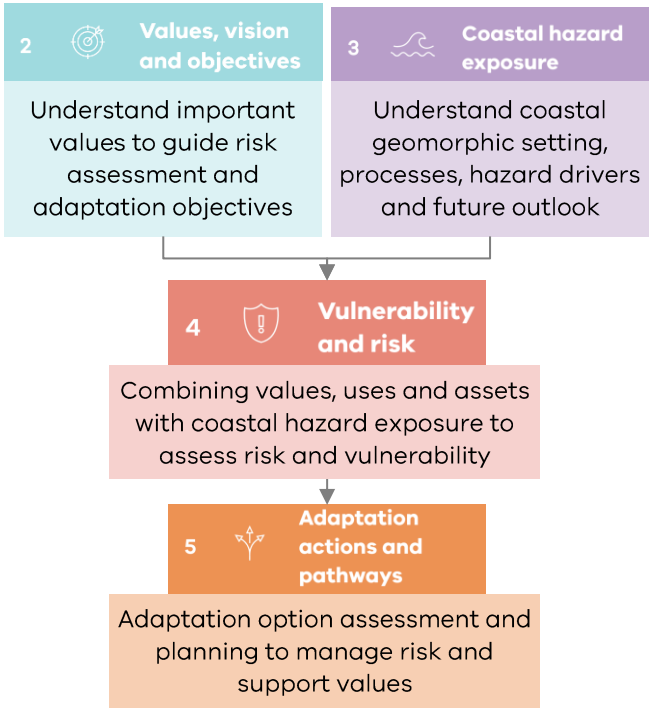

Figure 2. How Stages 2 and 3 inform Stages 4 and 5 of the Adapt West project.

Engaging to shape adaptation

Community input has informed adaptation planning to date by:

- Highlighting core community values, priorities and aspirations to guide adaptation objectives and a vision for the future.
- Establishing important values, uses and infrastructure that need to be included in the risk and vulnerability assessment.
- Using local knowledge to inform understanding of coastal processes and hazards, how these have changed over time, and what the future might hold.
- Determining the consequences of coastal hazards on people and communities, which helps us determine the risk and level of risk tolerance.

You can read more about outcomes from community engagement in the Engagement Update #1. See the document library to read more.

In addition to community input, RaSP partners have been shaping the technical approach to Stages 2, 3 and 4. Partners have contributed to numerous online and in-person meetings, workshops and site visits.

There will be more opportunities to get involved throughout the Adapt West project. In future engagement we'll be exploring adaptation options, actions and preferences to guide planning.

Limeburners Bay. Credit: Alluvium.

Next steps

Over the coming months we'll be:

- Refining the risk and vulnerability assessment and analysing results.
- Undertaking dedicated economic assessments to understand the economic cost of coastal hazards without adaptation (an economic base case).
- Developing our priorities for adaptation and planning for Stage 5 of the project, including further community engagement.

How can I get involved?

To find out more and stay up to date with the project visit the Engage Victoria website at:

engage.vic.gov.au/adapt-west

There you can:

- Follow the project to ensure you keep up to date with the project and upcoming activities.
- Read our latest project updates and factsheets.
- Email us at: **adapt.west@deeca.vic.gov.au.**

Werribee South Beach Credit: Alluvium.

We acknowledge Victorian Traditional Owners and their Elders past and present as the original custodians of Victoria's land and waters and commit to genuinely partnering with them and Victoria's Aboriginal community to progress their aspirations.

ISBN 978-1-76176-356-4 **(pdf/online/MS word)**

Accessibility

To receive this document in an alternative format, phone the Customer Service Centre on 136 186, email customer.service@delwp.vic.gov.au, or contact National Relay Service on 133 677. Available at DEECA website (www.deeca.vic.gov.au).