South West (Barwon) Region

Emergency Response Plan

SES

Tsunami Sub-plan

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This publication is intended to be consistent with the State Emergency Response Plan (SERP), published by Emergency Management Victoria (EMV) in 2016.

Authorised by the Victoria State Emergency Service (VICSES)
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An electronic version of the plan can be obtained at: https://www.ses.vic.gov.au/em-sector/vicses-emergency-plans.

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South West (Barwon) Region
Emergency Response Plan – Tsunami Sub-plan
1.0, August 2019

South West (Barwon) Region Emergency Response Plan – Tsunami Sub-plan Certification

The South West (Barwon) Region Emergency Response Plan – Tsunami Sub-plan deals with response to tsunami incidents within the South West (Barwon) area of responsibility.

The following plan is intended to provide the framework for South West (Barwon) Region to effectively and efficiently respond to future emergencies caused by tsunami and will remain current until rescinded by authority of the VICSES Chief Officer Operations.

_____ Date: 10 October 2019

Tim Wiebusch
Chief Officer Operations

This plan is produced by VICSES and has been adapted from the SERP – Tsunami Sub-plan. All information contained in this plan was current at time of publication.

VICSES would like to acknowledge the significant contribution of key stakeholders to ensure the content contained within this plan is of a high quality to support response activities.

For further details about this plan, please contact South West (Barwon) Region:

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State Emergency Management Priorities

The State Emergency Management Priorities are:

- Protection and preservation of life is paramount. This includes:
    - Safety of emergency response personnel.
    - Safety of community members including vulnerable community members and visitors/touris
- Issuing of community information and community warnings detailing incident information that is timely, relevant and tailored to assist community members make informed decisions about their safety.
- Protection of critical infrastructure and community assets that support community resilience.
- Protection of residential property as a place of primary residence.
- Protection of assets supporting individual livelihoods and economic production that supports individual and community financial sustainability.
- Protection of environmental and conservation assets that considers the cultural, biodiversity, and social values of the environment.

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1. Introduction

1.1 Purpose

The purpose of this plan is to provide strategic guidance for the effective emergency management of a tsunami event in the South West (Barwon) Region.

1.2 Objective

The objective of the South West (Barwon) Region Emergency Response Plan – Tsunami Sub-plan is to outline the regional arrangements to ensure an integrated and coordinated approach to the management of tsunami events in South West (Barwon) Region, in order to reduce the impact and consequences of these events on the community, infrastructure and services.

1.3 Scope

This South West (Barwon) Region Emergency Response Plan – Tsunami Sub-plan includes:

- Description of potential risks and consequences of tsunami to the social, built, economic and natural environments.
- Region specific emergency management arrangements for the management of tsunami.
- Links to sources of information where the reader can obtain further detail.

1.4 Authorising Environment

The *Emergency Management Act (1986 and 2013)* is the empowering legislation for the management of emergencies in Victoria.

The Emergency Management Manual Victoria (EMMV) contains policy and planning documents for emergency management in Victoria and provides details about the roles different organisations play in the emergency management arrangements.

The (SERP) (Part 3, EMMV) identifies Victoria's organisational arrangements for managing the response to emergencies.

The South West (Barwon) Region Emergency Response Plan will detail specific arrangements for the management of emergencies within the South West (Barwon) Region. This plan has been developed as a subordinate plan of the South West (Barwon) Region Emergency Response Plan and the SERP – Tsunami Sub-plan. This plan has been shared with the Regional Emergency Management Committee for comment and approved by the VICSES Chief Officer Operations.

Other relevant legislation includes:

- *Victoria State Emergency Service Act 2005*
- *Essential Services Act 1958*
- *Planning and Environment Act 1989*
- *Local Government Act 1989.*

1.5 Activation of the plan

The arrangements in this plan apply on a continuing basis and do not require activation.

1.6 Audience

The audience for this plan comprises the Victorian Government and agencies within the emergency management sector, including business and community groups with a significant role in the management of the emergency.

Although the wider community is not the primary audience, community members may find the contents of this plan informative.

1.7 Linkages

This plan is a sub-plan of the SERP – Tsunami Sub-plan and the South West (Barwon) Region Emergency Response Plan. It reflects legislation, the arrangements in the SERP, the strategic direction for emergency management in Victoria and the accepted State practice for managing emergencies.

It is likely that tsunami events will include impacts of flooding and storm surge for areas prone to coastal flooding. For arrangements for the management of flooding, refer to the SERP – Flood Sub-plan and South West (Barwon) Region – Flood Sub-plan at www.ses.vic.gov.au.

Arrangements in this plan have not been repeated from afore mentioned plans, unless necessary to ensure context and readability. The SERP – Tsunami Sub-plan can be accessed at www.ses.vic.gov.au.

Arrangements for the management of secondary consequences are contained in the following:

- Health response – State Health Emergency Response Plan (SHERP)
- Rescue – the Victorian Urban Search and Rescue (USAR) Response Arrangements
- Flood response – SERP – Flood Sub-plan and South West (Barwon) Emergency Response Plan – Flood Sub-plan.

1.8 Exercising and evaluation

This plan will be exercised within one year from the date of approval and once every three years thereafter as part of a phased cycle. A Region Tsunami Scenario has been created to support this function available in Attachment 1 – Region Tsunami Scenario. Exercises will be evaluated and, where improvements to the emergency management arrangements in this plan are required, the plan will be amended and a revised version issued. Exercises will be conducted in accordance with the State Exercising Framework.

Any operational activity in the South West (Barwon) Region requiring the management of a tsunami event will be regarded as exercising of the plan. The event is to be evaluated and reviewed, as outlined above.

1.9 Review

This plan was current at the time of publication and remains in effect until modified, superseded or withdrawn.

This plan will be reviewed and updated every three years. Consideration will be given to an earlier revision if the plan has been applied in a major emergency or exercise or following a substantial change to the relevant legislation or arrangements.

2. The tsunami risk within the South West (Barwon) Region

2.1 Region description

The South West (Barwon) Region of Victoria stretches from Little River, to the tip of the Queenscliff Heads, and to the border of South Australia. The region covers an area of 32,340 square kilometres, including 800km and 40% of Victoria's coastline. This includes the world famous Great Ocean Road, which attracts thousands of tourists throughout the year.

The South West (Barwon) Region has a population of approximately 420,000 people and includes the Local Government Areas (LGAs) of Queenscliffe, Greater Geelong, Surf Coast, Colac Otway, Corangamite, Moyne, Warrnambool, Southern Grampians and Glenelg. It is home to Victoria's largest provincial center Geelong, alongside other regional cities including Aireys Inlet, Anglesea, Apollo Bay, Camperdown, Colac, Hamilton, Lorne, Port Campbell, Port Fairy, Portland, Torquay and Warrnambool.

South West (Barwon) Region is highly regarded as a centre for excellence in education. With government and independent options available at primary and secondary level, the region is home to Technical and Further Education (TAFE) and university institutions including the Royal Melbourne Institute of Technology (RMIT) in Hamilton, and the expanding Deakin University in Geelong and Warrnambool.

The region is also home to a variety of nationally and internationally recognised sporting events, including the Rip Curl Pro World Surfing Titles and the world's largest organised swim, the Lorne Pier to Pub. This accompanies the region's number of impressive sporting complexes, including golf courses, aquatic centres, speedways, and thoroughbred and harness racing tracks.

Beside sporting events, the region also hosts a number of year-round cultural events, including the Greater Geelong food, wine and music festival Toast to the Coast, music festivals Falls Festival and the Port Fairy Folk Festival, the biennial Australian International Airshow at Avalon Airport, and Warrnambool's eight-day Fun4Kids Festival.

The region's rich soil provides the basis for thriving horticulture, viticulture, dairy production, timber plantation/harvesting, cattle grazing and wool production. There is continued development of alternative energy sources throughout the region, including gas, wind, geothermal and wave energy power plants.

It also has access to key transit services including a port at Geelong and deep-water port at Portland, and an established rail network with interstate connections and several commercial airports, with Avalon being the biggest.

Climate change poses significant challenges for the region. Coastal towns, buildings and infrastructure are at risk from of higher sea levels, erosion, flooding, and storm surges.

2.2 The tsunami hazard

A tsunami is a series of ocean waves generated by a sudden displacement of large volumes of water. The impacts of a tsunami can vary widely. A small tsunami may result in unusual tides or currents that can be dangerous to swimmers or cause damage to berthed vessels. A large tsunami can cause widespread flooding and destruction. It may also cause strong rips and currents in oceans around the world for up to a few days after an earthquake. A large tsunami in the Victorian context is considered a low probability, but is a high consequence event. Smaller tsunamis will occur more frequently, but will likely only pose a risk to individuals and assets in or on water. A description of possible tsunami sources and the characteristics and effects of tsunami is given below.

Tsunami may be caused by any one or combination of the following:

- Vertical movement of the sea floor as a result of a large earthquake.
- Sub-marine or coastal volcanic eruptions.
- Meteor impacts.
- Coastal landslides and slumps, either land-based or sub-marine.

The size of tsunami can range from centimetres, resulting in strong and unusual currents, to tens of metres, causing the flooding of coastal land. Earthquakes have generated the majority of tsunamis that have occurred in the Pacific Ocean and been recorded on the Australian coast. However, no clear relationship exists between earthquake intensity and tsunami magnitude. Not all earthquakes generate a tsunami. To generate a tsunami, the fault where the earthquake occurs must be underneath or near the ocean, and the earthquake must cause significant vertical movement of the sea floor over a large area. Shallow focus earthquakes along tectonic plate subduction zones are responsible for the most destructive tsunami.

Further detailed information about tsunami generation, sources and behaviour is contained in the SERP – Tsunami Sub-plan.

2.3 Characteristics of tsunami

Tsunamis are primarily characterised by their long wavelength, which can range from 10 to 500 kilometres long. Tsunamis travel outward in all directions from their point of origin, and can strike coastal areas at great distances from the source. Tsunamis can arrive with a leading crest or a leading trough. Tsunamis may strike the coast as a cresting wave, a fast rising tide, or a bore. At some locations, the advancing turbulent front will be the most destructive part of the wave. In other situations, the greatest damage will be caused by the outflow of water back to the sea, between successive tsunami waves.

Tsunami magnitude at the coast is dependent on the configuration of the coastline, the shape of the ocean floor, reflection of waves, tides and wind waves. Narrow bays, inlets and estuaries may cause funnelling effects that enhance tsunami magnitude. The combination of these factors means that the flooding produced by a tsunami can vary greatly from place to place over a short distance.

A tsunami is not one wave, but a series of waves. The time between the successive waves is usually between 5 and 90 minutes. Destructive waves may continue for a number of hours, and several days may pass before the sea returns to its normal state. The first wave in the series may not be the largest.

Tsunamis can wrap around islands, and damage can be worst on coasts on the lee-side that face away from the source of the tsunami. Tsunamis impacting on harbours and bays can create damaging wave activity and currents. In these enclosed environments, maximum wave magnitudes may possibly occur somewhat later than the arrival of the initial wave. Even small tsunamis can generate currents strong enough to cause damage to boats and associated facilities.

2.4 Warning time

Warning time, and therefore warning arrangements, will vary depending on the proximity of tsunami generation. For example:

- A distant tsunami (e.g. in Chile, California or Alaska) may arrive more than 12 hours after it has been generated.
- An earthquake-generated tsunami along the Puysegur Trench in New Zealand may arrive approximately 2 hours after the earthquake.
- A local tsunami, possibly caused by a sub-marine landslide, may arrive at the initial point of impact along the Victorian coast within minutes. Under these circumstances, limited warning time may be available to adjacent coastal communities outside the initial impact area.

2.5 Regional resources

VICSES resource processes are set out in the VICSES Operations Management Manual.

Regional resources remain under the command of the Regional Agency Commander (RAC) until they arrive at the incident.

Key regional resources used for tsunami response include:

- Attachment 2 – VICSES Regional Resource List
- Attachment 3 - VICSES Regional Control Centre Footprint and SES Unit Map
- Attachment 4 – VICSES General Response Boundaries Map
- Attachment 5 – Divisional Command Location Map

Additional expert multi-agency resources are accessible during operations through the Australasian Inter-Service Incident Management System (AIIMS) structure, and can be requested via the State Resource Request System.

A map of VICSES unit general response boundaries is available in Attachment 3 – VICSES Regional Control Centre Footprint and SES Unit Map, Attachment 4 – VICSES General Response Boundaries Map, and via Emergency Management – Common Operating Picture (EM-COP) for registered users.

3. Consequences

3.1 Possible tsunami consequences

The consequences of a tsunami will vary depending on its magnitude. Most tsunamis will be only small, resulting in strong currents and changing water levels over a period of time, which may affect marine based risk elements such as people on beaches, swimmers, boaters, divers, fishers, aqua-culture industries and sub-marine infrastructure (e.g. submarine cables).

Larger tsunamis that may inundate land are rare in the Victorian context. Damage from large tsunami may result from:

- Inundation (or flooding)
- Wave and debris impact on structures
- Erosion

Damage from a large tsunami will impact marine based risk groups highlighted above, as well as land based risk groups including:

- People and property in caravan parks and camping areas in low-lying coastal areas or on floodplains in tidal river areas.
- Residential, commercial and industrial buildings and their occupants in low-lying coastal areas or on floodplains in tidal river areas.
- Coastal infrastructure including ports, airports, roads, bridges, power, water, gas, sewerage and telecommunications.
- Motorists and vehicles along low-lying roads.
- Low-lying coastal farmland including animals and crops.
- Institutions such as schools and hospitals located in low-lying coastal areas.
- Walkers in coastal parks and reserves.

Significant community disruption can occur as a result of damage to infrastructure, which may lead to cascading secondary consequences. For example, a loss of power may result in a loss of telecommunications, traffic signals and disruption to supply chains, among other impacts. Damage to coastal road infrastructure may result in isolation of properties and/or communities.

Refer to Attachment 7 – Land Managers Map for the various land managers along the coast line of the South West (Barwon) Region.

3.2 Tsunami history

The following table provides information about historical occurrences of tsunami within the South West (Barwon) Region.

Year	Locality impacted	Description
28 February 2010	Portland	Magnitude 8.8, centred off the central coast of Chile, South America at 5:34pm EDT on Saturday 27 February 2010. Australia's warning response: Sunday, 28 February 2010 4:00am EDT: Tsunami Marine Threat Warning expanded to cover Australia's East Coast from southern Tasmania (Low Rocky Point to Flinders Island), Victoria (Lakes Entrance to Gabo Island), all of the New South Wales coast, Queensland (Point Danger to St Laurence), as well as Lord Howe and Norfolk Islands. Impacts on Australia The tsunami was estimated to take approximately 15 to 18 hours to travel across the Pacific Ocean, and first began being observed on tide gauges at Australian locations on Sunday 28 February 2010 at: Portland, Vic - tsunami effects observed from 10:22am EDT, highest wave: 11 cm. Sea level fluctuations outside normal conditions were recorded at many locations around Australia for more than 12 hours after the initial arrival of the tsunami.

4. Community Resilience

4.1 Shared and individual responsibility for action

The National Strategy for Disaster Resilience, developed by the Council of Australian Governments (COAG), provides high-level guidance on disaster management to agencies with a role in emergency management.

Foremost in the strategy is the principle of all of society taking responsibility for preparing for disasters.

Examples in the context of tsunami include:

- Individuals being aware of their tsunami risk, and following advice from emergency services when responding to warnings.
- Local governments and communities including tsunami risk within their Community Emergency Risk Assessment (CERA) activities.
- Industry and businesses planning for the risk of disruption, and ensuring arrangements are in place to maintain critical services, and assist communities where possible.

- Government agencies undertaking:
    - Risk assessments to gain an appreciation of tsunami risk.
    - Engaging with the community regarding tsunami risk.
    - Work with communities to plan the management of tsunami risk.
    - Providing emergency information and tsunami warnings.
    - Ensuring an effective, well-coordinated response during tsunami.
    - Helping communities to recover and learn following a tsunami and to build their resilience to future events.

VICSES has developed a Community Resilience Strategy and delivers programs to at-risk communities to provide information on what to do before, during and after tsunami. Information can be found at www.ses.vic.gov.au/get-ready.

4.2 Australian Tsunami Warning System

The official tsunami warning centre for Australia is the Joint Australian Tsunami Warning Centre (JATWC). The centre is operated by the Bureau of Meteorology (BOM) and Geoscience Australia, and is responsible for issuing Tsunami Watches and Warnings for Australia including Victoria. These services are outlined in detail in the SERP – Tsunami Sub-plan:

- **National Tsunami No Threat Bulletin** – issued when it has been determined that there is no threat of dangerous tsunami to the Australian mainland, islands or territories.
- **Tsunami Watch** – issued when there is a possible tsunami threat after an undersea earthquake has been detected and analysed. The Tsunami Watch will be issued in one of two categories:
    - **National Tsunami Watch** – issued in the context of Australian region.
    - **Victorian Tsunami Watch** – issued in the context of Victoria only.
- **Tsunami Warning** – issued when there is a high degree of confidence that a tsunami threat exists based upon detection that a tsunami has been generated; or if the tsunami is less than 90 minutes away from a potential first point of impact. The Tsunami Warning will be issued in one of two categories:
    - **Marine and Immediate Foreshore Threat** – the tsunami is expected to mainly affect the marine environment for specified coastal areas.
    - **Land Inundation Threat** – warnings for low-lying coastal areas of major land flooding, dangerous waves and strong ocean currents.
- **National Tsunami Warning Summary** – once separate Tsunami Watches or Warnings are issued for individual states and territories, a National Tsunami Warning Summary will be issued listing all of the watches, warnings and cancellations that are in effect for the current tsunami event. The JATWC website provides a complementary coastal threat graphic showing the regions currently under threat, located at www.bom.gov.au/tsunami.
- **Tsunami Watch Cancellation or Tsunami Warning Cancellations** – Issued by the JATWC through BOM, in consultation with the VICSES. Cancellations are issued after confirmation that destructive impacts will not eventuate from a tsunami or after confirmation that a tsunami event has ended, and the coastal area is safe for emergency services to enter the impacted area to commence immediate post-impact response operations.

4.3 Notification of tsunami other than from Bureau of Meteorology

To maximise the opportunity for some warning following the initial impact of a locally generated tsunami such as a sub-marine or coastal landslide, for which there is no pre-impact notification via BOM, the following is to be undertaken:

- Local VICSES units will report any tsunami impact through their relevant VICSES Regional Duty Officer (RDO), who will then pass this information on to the State Duty Officer (SDO).
- Life Saving Victoria will notify the relevant VICSES RDO of any unusual ocean behaviour which may be indicative of an imminent tsunami, or when a tsunami has occurred.
- Victoria Police will notify the VICSES SDO of any information they receive indicating the impact of a tsunami (e.g. information received via calls to 000), including information from adjacent states.
- The VICSES SDO will alert BOM to the impact of the tsunami. BOM will then issue a tsunami warning to all Victorian coastal broadcast media and emergency services.

4.4 Municipal tsunami emergency Planning

Where tsunami is identified through the emergency risk management process as a priority risk to a community, VICSES will provide advice and support to the Municipal Emergency Management Planning Committee (MEMPC) to ensure the Municipal Emergency Management Plan (MEMP) contains, at a minimum, arrangements for the response to a tsunami event based on an all-hazards and all-agency response.

4.5 Community engagement

Community engagement programs to build community resilience for tsunami are conducted in accordance with the VICSES Community Resilience Strategy, as outlined in section 4.1.

Programs to build resilience in the South West (Barwon) Region include local engagement activities and initiatives such as attending local community events, school fetes, local and regional shows, as well as unit identified activities

Tsunami education resources have been developed by VICSES and are available to provide information on tsunami risk. These resources are accessible at www.ses.vic.gov.au/get-ready/tsunamisafe.

4.6 Household and business plans

The Emergency Management Commissioner advises that every household and business should have a written emergency plan. Information on the development of these plans can be found at www.ses.vic.gov.au.

The South West (Barwon) Region also supports local caravan park owners in preparing for emergencies through the use of the online caravan park planning tool which can be found at www.ses.vic.gov.au/get-ready/caravan-park-information.

4.7 Community safety advice

VICSES provides advice to community in the form of key safety messages for tsunami including advice for safe evacuation. A full list of community safety advice messages are accessible online via EM-COP, in the IMT Toolbox.

5. Managing a tsunami event

5.1 Roles and responsibilities

Roles and responsibilities of agencies involved in responding to tsunami are detailed in the SERP – Tsunami Sub-plan.

5.2 Concept of operations

The concept of operations for responding to tsunami is detailed in the SERP – Tsunami Sub-plan.

5.3 Escalation and notification

As detailed in section 4.2, BOM publishes tsunami watches and warnings on its public website (www.bom.gov.au/tsunami) and provides them to pre-identified agencies, organisations and media outlets, including pager and email warning messages to VICSES at a state and regional level.

Upon the receipt of a tsunami watch or warning, RDOs will acknowledge the pager message and notify the RAC to notify the Regional Controller (RC) and/or Regional Emergency Management Team (REMT) members for earthquake response, and any relevant units.

The escalation and notification process for tsunami response is operationalised within the VICSES Standard Operating Procedure (SOP) 047 – Tsunami Notification and Activation Process.

5.4 Strategic response planning

The actions listed below are the responsibility of VICSES at regional and state tiers. Responsibility for these actions may transition to the RC to support multi-agency response when significant impacts caused by a tsunami event occur.

On the receipt of a tsunami watch or warning from BOM, the RAC will undertake strategic level planning in anticipation of an event. Key considerations will include:

- Establishing the control structure for managing the event.
- Supporting consistent emergency warnings and provision of information to the community.
- Implementation of evacuation and emergency relief plans and identification of evacuation points.
- Confirming agencies at all tiers are activating appropriate preparedness arrangements for the impending impact of a tsunami.
- Identifying the likely consequences of the tsunami impact and any interdependencies that may affect planning.
- Confirming agencies have adequate resources in place to fulfil their responsibilities and are planning for sustainment and surge capacity, including identification of need for interstate or international assistance
- Identifying mass gatherings and large public events that may be at risk, and arrangements to ensure the safety of individuals attending.
- Pre-positioning resources to priority areas.
- Confirming agencies with call-taking responsibilities have resources in place and back up arrangements to cope with the expected call load.
- Positioning of Emergency Management Liaison Officers (EMLOs) from key support agencies to Regional Control Centres (RCCs), where appropriate.
- Arranging for regular meetings of the REMTs and Incident Emergency Management Teams (IEMTs).
- Providing situation reports to the State Control Team (SCT).

5.5 Cross border arrangements

Part 8 of the EMMV explains the procedure for requesting emergency support from other states.

Bannockburn Unit sits in the Mid West (Grampians) Region, but is managed by South West (Barwon) Region due to its proximity to Geelong and part of the Golden Plains Shire being located in the Geelong ICC footprint.

5.6 Regional Control Centre

The following pre-determined facilitates are suitable for the establishment of a RCC for the management of tsunami events:

- Barwon South West Regional Control Centre
  CFA Regional Office
  61-63 Separation Street
  North Geelong VIC 3215

For a map of the RCC footprint see Attachment 3 – VICSES Regional Control Centre Footprint and VICSES Unit Map.

5.7 Incident Control Centres

VICSES has two Incident Control Centre (ICC) locations that have been pre-determined for tsunami readiness (see table below). Requirements and resourcing for ICCs is outlined in JSOP 2.03 Incident Management Team Readiness Arrangements. A map of ICC footprints is available in Attachment 4.

Location	Local Government Area within footprint
District 5 CFA Service Centre Corner Walsh Road & Princes Highway, Warrnambool VIC 3280	Corangamite Glenelg, Moyne Southern Grampians Shires Warrnambool City Council
Geelong – VICSES Regional Office 90 Furner Avenue, Bell Park VIC 3215	City of Greater Geelong Borough of Queenscliff Colac Otway Surf Coast Part of the Golden Plains Shires

Within the South West (Barwon) Region there are additional ICCs capable of running Level 3 Incidents that may be used by VICSES personnel in the event of localised incidents (see table below). These ICCs may act as redundancies should the Warrnambool or Geelong ICCs become non-functional (i.e. if affected by the incident).

Location	Local Government Area within footprint
Department of Environment, Land, Water and Planning (DELWP) Office 83 – 85 Gellibrand Street Colac 3250	Within Geelong ICC footprint.
Heywood - DELWP Office 12 Murray Street Heywood 3304	Within Warrnambool ICC footprint.

5.8 Divisional Command Points

The following table lists facilities suitable for use as Divisional Command Points (DCPs).

Location	VICSES Units within footprint	Local Government Areas within footprint
Hamilton Regional Office	Dartmoor Heywood Portland	Glenelg
	Balmoral Dunkeld Hamilton	Southern Grampians
VICSES Warrnambool Unit local headquarters	Mortlake Port Fairy Warrnambool	Moyne Shire and Warrnambool City Council
	Camperdown Cobden Lismore Port Campbell Terang	Corangamite Shire
VICSES South Barwon Unit local headquarters	Colac Otway	Colac Otway Shire
	Lorne Torquay Winchelsea	Surf Coast Shire
	South Barwon	City of Greater Geelong
VICSES Geelong Unit local headquarters	Bellarine Corio Geelong	City Greater of Geelong
	Bannockburn	Golden Plains Shire (Mid West Region)

A map of DCPs can be viewed at Attachment 6 – Division Command Location Map.

5.9 Regional resource requirements

For the likely resource requirements for responding to a tsunami event within ICC footprints, see:

- Attachment 2 – VICSES Regional Resource List
- Attachment 7 – Agency Contact Details

5.10 Regional response

In the event of a tsunami warning for South West (Barwon) Region, the following should be considered:

- Depending on location of tsunami warning, ICCs at Geelong or Warrnambool to be activated.
- Community messaging and warnings – stay away from water's edge, move to higher ground, etc.
- Deployment of VICSES units to known locations that may become inundated – warn people to move (to be determined by consultation with units).
- Deployment of VICSES units to known highpoints to monitor sea conditions – water receding and appearing (to be determined by consultation with units).
- Notifying local coastal management organisations, e.g. Parks Victoria, Coastal Managers, local government authorities, etc.
- Notifying boating facility managers, e.g. Harbour Masters, LGAs, etc.
- Notify industries, e.g. gas plants, fishing fleets, horse racing, etc.

Glossary

AIIMS	Australasian Inter-Service Incident Management System
BOM	Bureau of Meteorology
CFA	Country Fire Authority
COAG	Council of Australian Governments
DCP	Divisional Command Point
DELWP	Department of Environment, Land, Water and Planning
EM-COP	Emergency Management – Common Operating Picture
EMLO	Emergency Management Liaison Officer
EMMV	Emergency Management Manual Victoria
EMV	Emergency Management Victoria
IC	Incident Controller
ICC	Incident Control Centre
ICT	Incident Control Team
IEMT	Incident Emergency Management Team
IMT	Incident Management Team
JATWC	Joint Australian Tsunami Warning Centre
JSOP	Joint Standard Operating Procedure
MEMP	Municipal Emergency Management Plan
RAC	Regional Agency Commander
RC	Regional Controller
RCC	Regional Control Centre
RDO	Regional Duty Officer
REMT	Regional Emergency Management Team
SCC	State Control Centre
SCT	State Control Team
SERP	State Emergency Response Plan
SOP	Standard Operating Procedure
USAR	Urban Search and Rescue
VICSES	Victoria State Emergency Service

Attachments

Attachment 1 – Region tsunami scenario

A region tsunami scenario has been developed to support periodic training requirements (outlined in section 1.8). These scenarios provide an opportunity to document anecdotal and/or known tsunami impacts based on historic events, and provide an indication of the resource requirements and associated gaps for operational response.

Note: The structures and resources set out for managing this event highlight the key personnel equipment that should be considered and are a guide only. The actual structure and resources used will depend on the State and Regional Controllers' priorities, e.g. such events may be accompanied by extreme fire danger risk in south west Victoria.

RCC structure

The Geelong RCC will be operational in this instance, with staffing as per rostered arrangements. Full REMT should be notified with key agencies in place at the RCC by request of the RC.

IMT structure

As per JSOP 2.03 RL 1 the IEMT should include representatives from municipalities (or a single representative from a municipality with connections to other municipalities in the ICC footprint), Vic Roads, Victoria Police (Traffic Manager and EMLO) and Ambulance Victoria. EMLOs from other emergency services should also be included, in particular DELWP and CFA.

Divisional command structure

DCPs (set out in attachment 6) should operate as Incident Control Points (ICPs) in the first instance, with transition to DCPs when the emergency activity within the division exceeds the capacity of the ICP's management structure, or at the direction of the RC or Incident Controller (IC) (at the nominated readiness ICCs). ICPs should include an IC and cover the operations, planning (including OIMS operators) and logistics functions. Representatives from LGAs and CFA or DELWP may assist with ensuring appropriate resource use at the division level.

Resource requirements

Resources listed are those that would be required at the peak of an event and would represent the resources of all agencies with responsibilities under the SERP – Tsunami Sub-plan. VICSES Resources required are listed in attachment 2.

External Agency	Resources
CFA	Chainsaw operators – trim and cross cut
	Sand bag crews
	Ground observers – initial impact Assessment
	IMT roles
	Ladder platform – specialist access
DELWP (see South West (Barwon) Region Readiness and Response Plan – DELWP)	Chainsaw operators/tree fallers
	Sand bag crews
	IMT roles
DHHS	Recovery
Local Government	Chainsaw operators/arborists
	Plant
	Relief and recovery
	Traffic management
Vic POL	Traffic management
	Evacuation management
VicRoads/Regional Roads Victoria	Chainsaw operators/arborists
	Traffic management

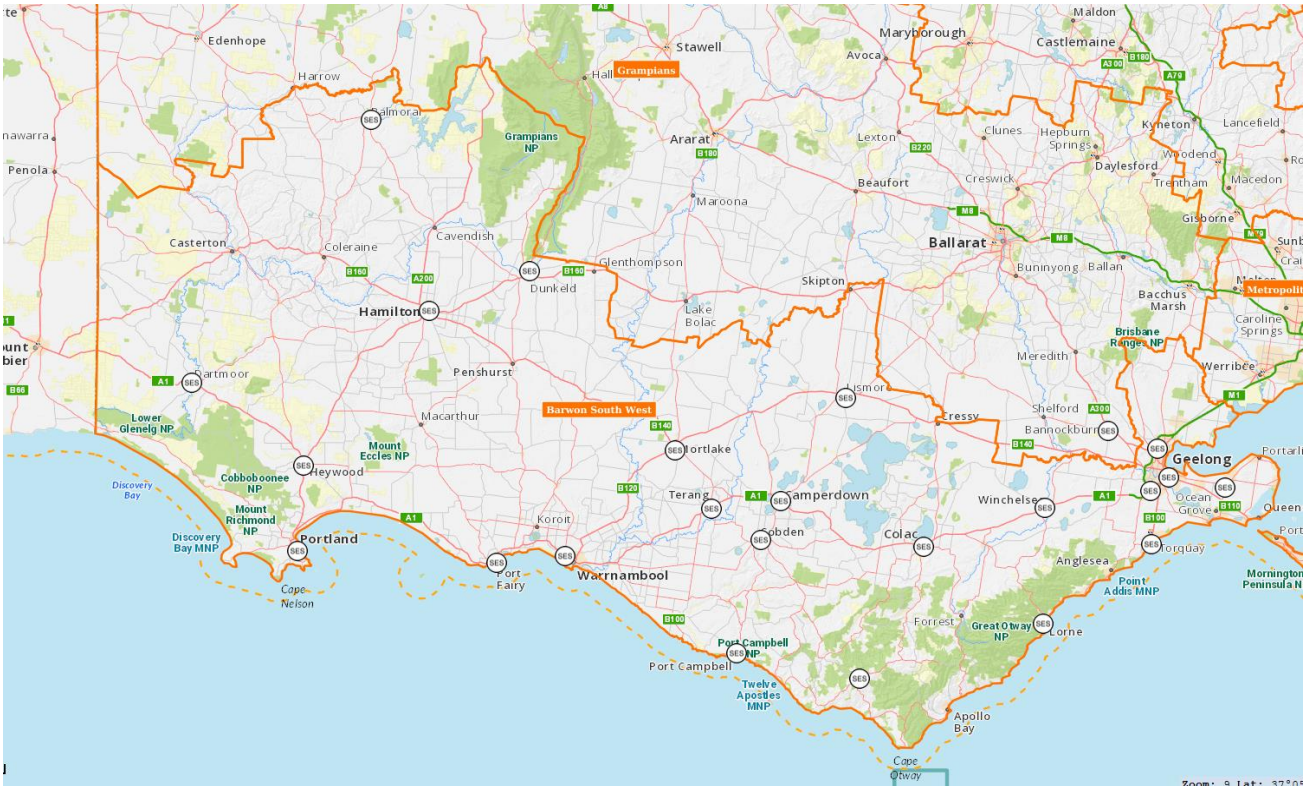
Attachment 2 – VICSES Regional Resources List

SW Unit No. / EAS paging No. / Rescource - Quick Reference

Unit	Unit No.	EAS paging number	Heavy Rescue	Medium Rescue	Medium Rescue 4wd	Rescue Support Light Rescue	Rescue Support Light Storm	Dog Support Rescue	Transport 4WD	Storm Trailer	Open Trailer	Enclosed Box Trailer	Welfare Trailer (BBQ)	ATV / All Terrain Vehicle	Rescue Boat	Launch & Trailer	Flood Sandbag Facility (Inbound)	Land Based Swift Water	Water Rescue	High Angle Rescue	Lighting Trailer	Water Mules	Push Bikes	EPA Air Monitoring	Logistics Truck	Field Operations Vehicle	Forklift	Car Trailer	PR / Comm Ed	IT Field Kit	Handheld Radio's FICO DR	Portable Radio Caches	EMLO Laptop Kit
Balmoral	850	30299			1			1						1								1											
Bannockburn	851	30301			1	1			1	1																							
Bellarine	852	30303	1			1		1	1	1		1	1	1	1			Y			1	1											
Camperdown	853	30305			1			1		1	1			1																			
Cobden	854	30307		1				1		1	1			1							1												
Colac	855	30309	1			1			1		1			1													1						
Corio	856	30311	1			1		1		1												1											
Dartmoor	857	30313			1				1		2			1																			
Dunkeld	858	30315			1				1	1		1										1											
Geelong	859	30317		1				2		1				2				Y			1				1							1	
Hamilton	861	30319	1					1		1				1							1	1		1									
Heywood	863	30321	1					1																									
Lismore	864	30323	1					1		1						1																	
Lorne	865	30325			1			1		1																							
Mortlake	866	30327	1						1	1																							
Otway	867	30329			1			1					1									1											
Port Campbell	868	30331			1			1				1							1	1		1											
Port Fairy	869	30333	1			1		1			1	1		1								1											
Portland	870	30335	1				1	1	1	1	1			1					1	1		1											
South Barwon	871	30337	1			1		2		1	1							Y															
Terang	872	30339	1					1																									
Torquay	873	30341	1			1		1		1	1											1	2										
Warrnambool	874	30343	1		1			2	1	2	1	1	1	1	1	1		Y			1	1	2										
Winchelsea	875	30345	1					1													1												
South West Geelong	878	30348		1							1													1		1		2	1	1		2	
South West Hamilton	878	30348										1														1		1	1	1	1	1	
South West Warrnambool	878	30348																														1	
Total			14	3	9	7	1	22	8	16	11	7	2	6	9	1	1	0	2	2	6	11	4	1	1	1	2	1	3	2	2	2	4

Current as at June 2019.

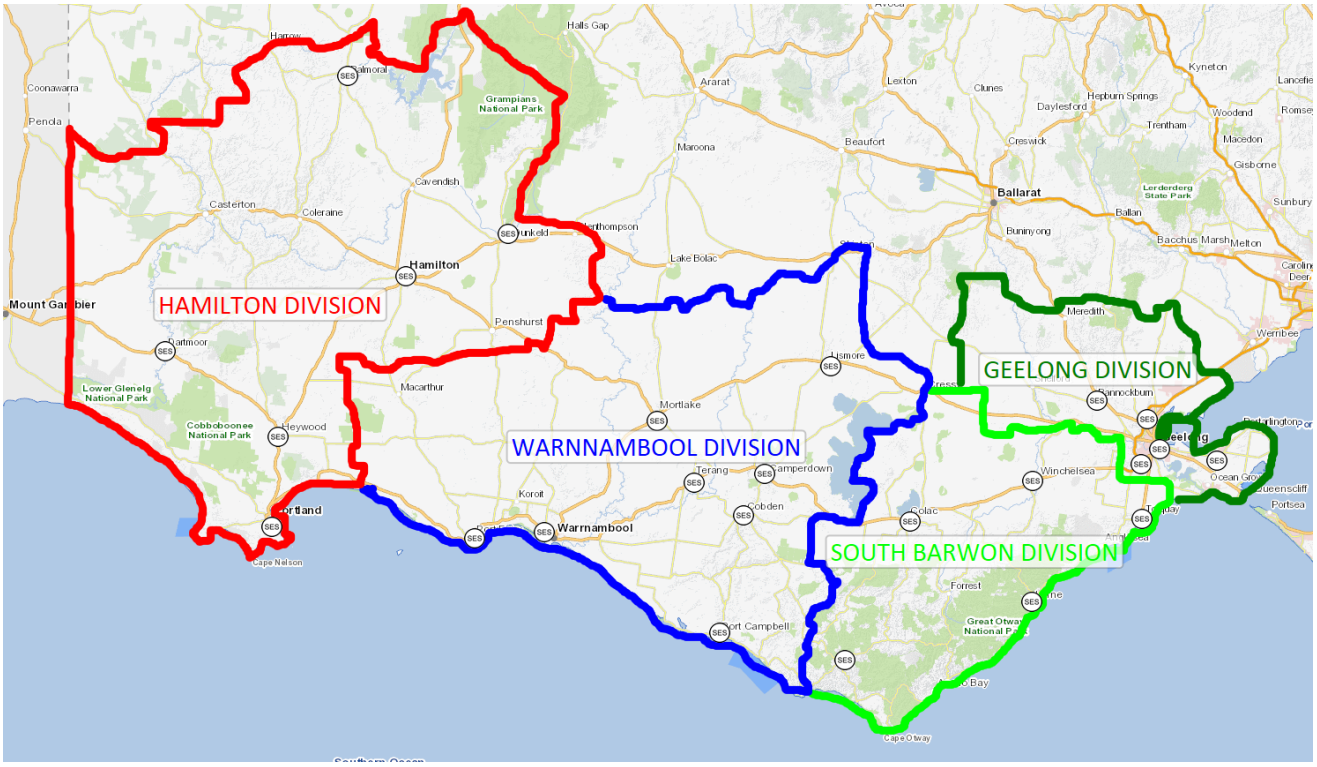
Attachment 3 – VICSES Regional Control Centre Footprint and VICSES Unit Map



Attachment 4 – VICSES General Response Boundaries Map

South West VICSES Response Structure			
Warrnambool ICC			
Hamilton Division		**Warrnambool Division**	
Dartmoor	1	Port Fairy	7
Portland	2	Warrnambool	8
Heywood	3	Mortlake	9
Hamilton	4	Terang	10
Balmoral	5	Port Campbell	11
Dunkeld	6	Cobden	12
		Camperdown	13
		Lismore	14
Geelong ICC (Black Boundary)			
South Barwon Division		**Geelong Division**	
Colac	15	Bannockburn	20
Otway	16	Corio	21
Lorne	17	Geelong	22
Torquay	18	Bellarine	24
Winchelsea	19		
South Barwon	23		

Attachment 5 – Division Command Location Map



Attachment 6 – Agency contact details

Emergency management contacts
Refer to South West (Barwon) Emergency Management Contact Directory updated by Department Health and Human Services (DHHS), Terry Murrihy 0419389372.

VICSES contacts
Refer to South West (Barwon) unit profiles.

Other Useful Contacts			
ABC	Emergency hotline (radio master control)	1300 737 102	
Ambulance	Medical emergency	000	
Centrol	Train control	03 9619 4350	1800 023 668
DJPR	Animal disease hotline	1800 675 888	
DJPR	Plant Pest and Disease Hotline	1800 084 881	
DET	Emergency Duty Officer	1300 333 232	1300 DEECD 2
DELWP	Customer service centre	136 186	
Energysafe Victoria	Electrical emergencies	1800 000 922	
Energysafe Victoria	Gas emergencies	132 771	
EPA	Litter Hotline	1800 352 555	
EPA	Pollution Hotline	1800 444 004	
ESTA	Ballarat	03 5337 3520	1300 705 911
Fire	CFA or MFB	000	
Help for Wildlife	Wildlife Rescue	0417 308 687	
Livestock	24hr National Assist Hotline Livestock Truck Roll over and Emergency Vet	136 186	
NOCC	Network Operations Control Centre – SMR Radio	03 9632 5595	1800 678 121
Parks Victoria	Call centre	13 19 63	
Police	Emergency	000	
PowerCor	Power outages	m.powercor.com.au	
Public Transport Victoria	Crisis and emergency response	03 9027 4241	03 9027 4011 (facsimile)
Transport Safety Victoria	Incident reporting	1800 301 151	
VicEmergency	VicEmergency Hotline	1800 226 226	
VicFish	Fisheries offences	13 FISH	13 3474
VLine / VicRail	24/7 Duty Officer	03 9619 1077	
VicRoads / RRV	Emergencies and road closures	131 170	
VICSES	Flood or storm	132 500	
VICSES	Life threatening	000	
Worksafe	Incident notification	13 23 60	

External subject matter expert contacts

Agency	Address	Name	Position	Phone	Mobile	Email
Corangamite Catchment Management Authority	64 Dennis Street Colac VIC 3250 5232 9100 (Switch) www.ccma.vic.gov.au	Geoff Taylor	Floodplain Statutory Manager	5224 9405	0417 605 244	geoff.taylor@ccma.vic.gov.au
		Tony Jones	Floodplain Statutory Senior Advisor		0490 095 202	tony.jones@ccma.vic.gov.au
		Penny Reed	Senior Floodplain Project Officer	5232 9100	0427 59 929	penny.reed@ccma.vic.gov.au
		Rachel Hawkins	Temporary Floodplain Administration Officer	5224 9407		rachel.hawkins@ccma.vic.gov.au
Glenelg Hopkins Catchment Management Authority	79 French Street Hamilton VIC 3300 5571 2526 (Switch) www.ghcma.vic.gov.au	Steve Homer	Floodplain & Works Manager	5551 3361	0487 674 196	s.homer@ghcma.vic.gov.au
		Graeme Jeffery	Statutory Water Planner	5551 3347	0434 769 813	g.jeffery@ghcma.vic.gov.au
		Amanda Sim	Environmental Engineer	5551 3366		a.sim@ghcma.vic.gov.au
		Sheree Kearns	Senior Environmental Engineer	5571 2526		s.kearns@ghcma.vic.gov.au
		Tatjana Bunge	Environmental Engineer	5551 3359	0408 817 656	t.bunge@ghcma.vic.gov.au
		Michael Clarke	Environmental Engineer	5551 3346		m.clarke@ghcma.vic.gov.au
DELWP Floodplain Management Unit	Level 12 / 8 Nicholson Street East Melbourne VIC 3002 PO Box 500 East Melbourne VIC 3002 9637 8000	Gil Marshall	Manager, Floodplain Management	9637 8657	0409 548 851	gil.marshall@delwp.vic.gov.au
		Mike Edwards	Program Leader, Strategic Policy	9637 9012	0409 963 036	mike.edwards@delwp.vic.gov.au
		Viktor Brenners	Senior Policy Officer	9637 9014	0439 023 931	viktor.brenners@delwp.vic.gov.au
		Simone Wilkinson	Senior Project Officer	5226 4771	0467 719 375	simone.wilkinson@delwp.vic.gov.au
		Rebecca Lett	Senior Project Officer	9637 8798	0407 767 781	rebecca.lett@delwp.vic.gov.au

	(Switch) 9637 8600 (Fax) www.delwp.vic.gov.au	Matt Allen	Floodzoom Program Manager	9637 9817	0427 809 521	matt.allen@delwp.vic.gov.au
		Kedar Kumthekar	Business Analyst	9637 9403		kedar.kumthekar@delwp.vic.gov.au
		Rebecca Dick	Project Officer	5036 4813	0438 674 866	rebecca.dick@delwp.vic.gov.au

Current as at June 2019.

Attachment 7 – Land Managers Map

Figure 8 Indicative map of foreshore, marine park and sanctuary managers

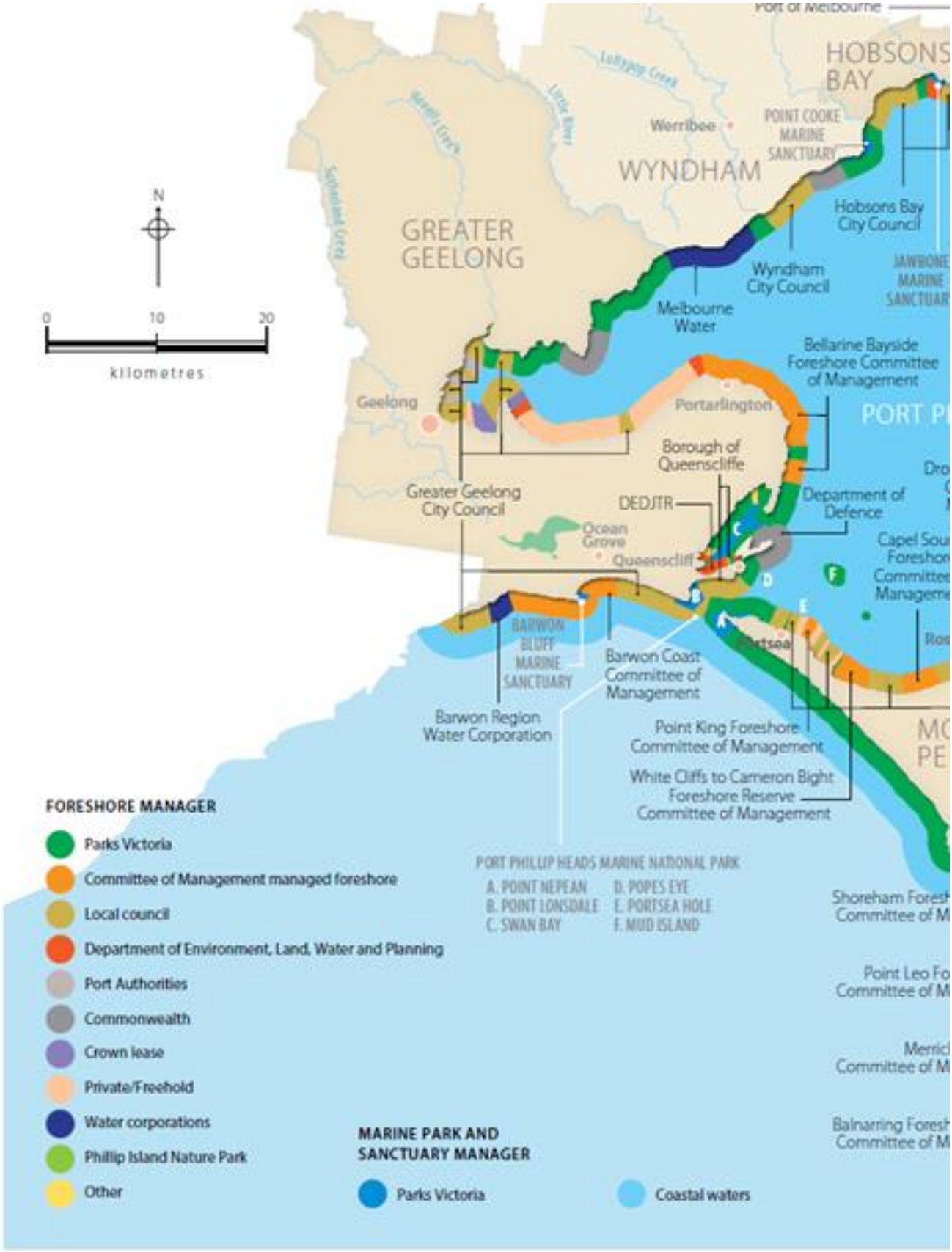


Figure 8 Indicative map of foreshore, marine park and sanctuary managers