



## ADVERSE EVENT MANAGEMENT PLAN



## Proprietary Information Statement

The information contained in this document produced by Holmes Dyer Pty Ltd is solely for the use of the Client identified on the coversheet for the purpose for which it has been prepared and Holmes Dyer Pty Ltd takes no responsibility to any third party who may rely upon this document.

All rights reserved. No section or element of this document may be removed from this document, reproduced electronically stored or transmitted in any form without the written permission of Holmes Dyer Pty Ltd.

## Grant acknowledgement

This project received grant funding from the Australian Government.

## Abbreviations

ABS – Australian Bureau of Statistics

BMAP – Bushfire Management Area Plan

BOM – Bureau of Meteorology

CFS – Country Fire Service (South Australia)

DEW – Department for Environment and Water

DPTI – Department of Planning, Transport and Infrastructure

EM – Emergency Management

FFDI - Forest Fire Danger Index

LGA SA – Local Government Association of South Australia

ML - Richter local magnitude

NERAG – National Emergency Risk Assessment Guidelines

NRM – Natural Resource Management

PIRSA – Primary Industries and Regions South Australia

PPRR – Prevention, Preparedness, Response and Recovery

RDA – Regional Development Australia

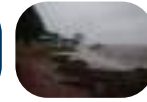
SEMP – State Emergency Management Plan

SES – State Emergency Services

ZEMP – Zone Emergency Management Plan

## Document Control

Revision	Description	Author	Date
v1	Proposed Structure for client review	BC/SG	19.03.2020
v2	Preliminary draft for client feedback	BC/SG	02.04.2020
v3	Final Draft	BC/SG	14.04.2020
v4	Final	BC/SG	24.04.2020



<b>01_Introduction and Purpose</b>	<b>Page 4</b>
<b>02_Snapshot of the Region</b>	<b>Page 6</b>
<b>03_Adverse Events</b>	<b>Page 7</b>
<b>04_Coordination and Communication</b>	<b>Page 10</b>
<b>05_Natural Resources</b>	<b>Page 11</b>
<b>06_Community Resilience and Economic Diversity</b>	<b>Page 13</b>
<b>07_Framework Based Assessment</b>	<b>Page 20</b>
<b>08_Conclusion</b>	<b>Page 26</b>

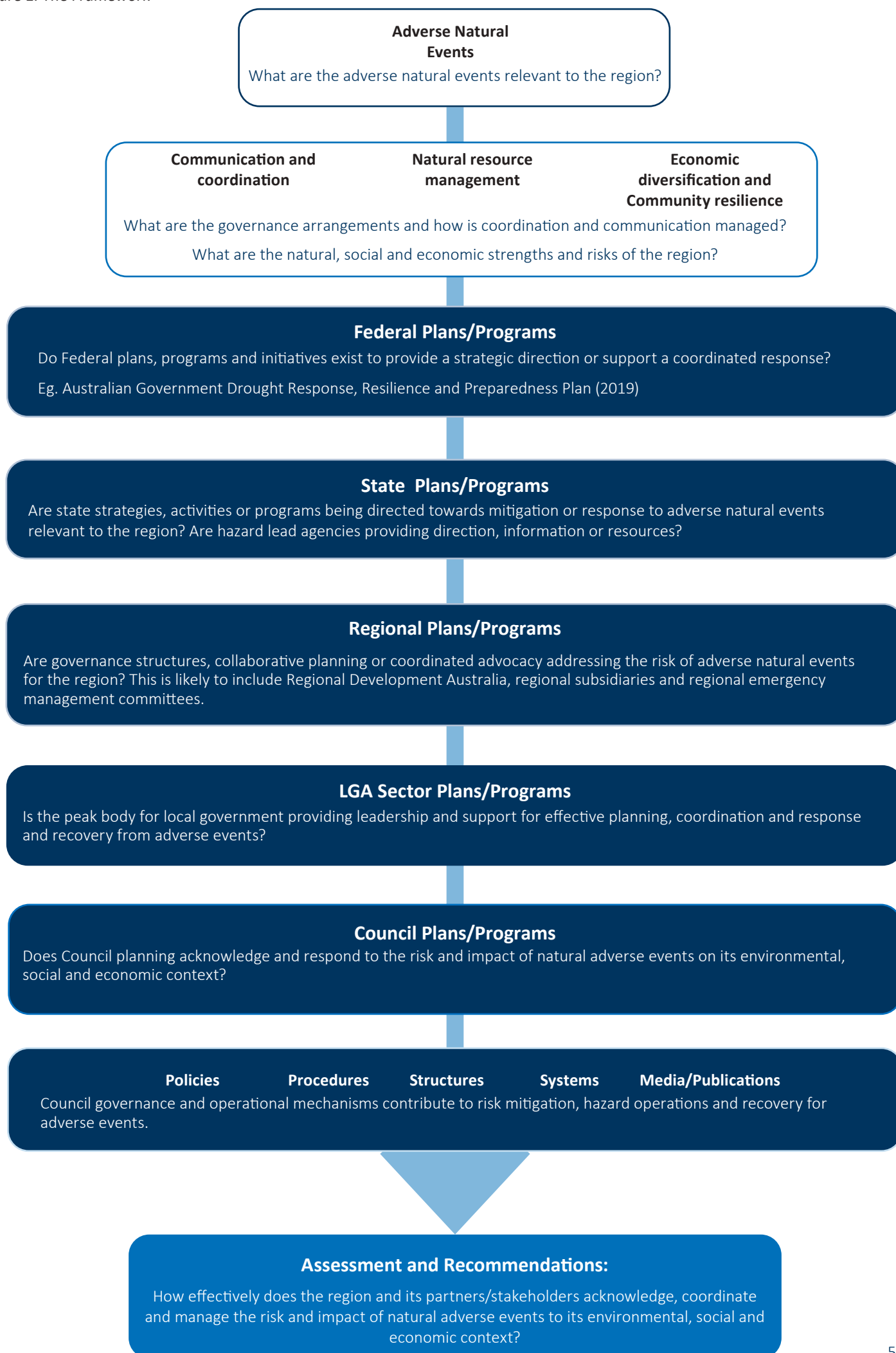


Introduction	Purpose	Approach
<p>Local government in South Australia is eligible for a range of federal government drought assistance measures to support communities impacted by drought.</p> <p>This includes the Drought Communities Programme (the program) which provides funding over three years from 2018-19. The intent of the program is to deliver immediate economic stimulus and other benefits to targeted drought-affected regions of Australia.</p> <p>Eligible councils are determined by the federal government based on need using rainfall deficiency data from the Bureau of Meteorology as well as population and industry data (reliance on agriculture).</p> <p>The local government areas of Yorke Peninsula, Copper Coast and Barunga West (the Councils) were approved for funding either as part of the original program announcement in 2018 or subsequently in 2019.</p> <p>As well as economic stimulus, the program seeks to build resilient communities that can plan for and manage adverse events. This Adverse Events Plan has been prepared by the Councils to meet the requirements of the program and the needs of its communities in relation to adverse events.</p>	<p>The Barunga West Council (Barunga West), Copper Coast Council (Copper Coast) and Yorke Peninsula Council (Yorke Peninsula) (the Councils) form part of a broader Yorke Peninsula Alliance (the Region).</p> <p>This Adverse Events Plan has been prepared by the Councils to:</p> <ul style="list-style-type: none"><li>• Demonstrate the systems, capacity and resilience of Councils and communities of the Region</li><li>• Provide ongoing value to these communities in relation to prevention, preparedness, response and recovery to adverse events</li><li>• Nominate critical projects, gaps and future opportunities that can improve the resilience of communities to adverse events.</li></ul> <p>The Adverse Events Plan will guide the Councils approach in preparing for and implementing response and recovery activities to adverse events in the Region.</p>	<p>The Adverse Events Plan (the Plan) provides a framework-based assessment of the way the Councils manage adverse events across the Region.</p> <p>The framework is based on relevant context and direction for managing adverse events and reflects key considerations in the areas of:</p> <ul style="list-style-type: none"><li>• Communication and coordination</li><li>• Natural resource management</li><li>• Economic diversification and community resilience</li></ul> <p>The framework approach is set within the statutory considerations provided by local government strategic and emergency management planning. It does not seek to duplicate these established frameworks. Rather the Adverse Events Plan seeks to inform established frameworks by identifying gaps and opportunities to build resilient communities.</p> <p>The approach relies on a desk-top assessment of existing policies, plans and systems for managing adverse events and communication by Councils. The approach has not considered the effective delivery or implementation of identified policies, plans and systems. The approach has allowed the targeted identification of gaps and opportunities for future prioritisation in the Region.</p>



Ardrossan jetty storm tide May 2016

Figure 1: The Framework





### The Three Councils Comprising the Region

The Region for the Adverse Events Plan extends from the foot of the Yorke Peninsula north to the Upper Yorke Peninsula. It comprises an area of about 8,330 square kilometres and supports a population of approximately 28,751 people. The Region caters for a mix of rural and seaside lifestyles.

The Barunga West Council is adjacent the mid-north of South Australia. At its southern most boundary the area is approximately 120 kilometres or a two-hour drive north-west of Adelaide. The area includes the small towns of Port Broughton and Bute.

The Copper Coast Council covers an area of some 780 square kilometres with rural farms comprising 97.5% of the area. The area includes the three large urban centres of Kadina, Moonta and Wallaroo with 'urban areas' covering approximately 19 square kilometres.

The Yorke Peninsula Council forms the southern part of the Region and has a distance of approximately 175 kilometres between its southern and northern boundaries. Covering an area of some 5,900 square kilometres, the Yorke Peninsula Council is the 8th largest council in South Australia and services 12 larger towns and 33 smaller townships and holiday settlements.

The Yorke Peninsula Council shares its northern boundary with the Copper Coast Council and Barunga West Council.

The Region is unique in that its western boundary is framed by sea with coastline to the Spencer Gulf. The Yorke Peninsula Council is also bordered to its south and east by coastline making that Council surrounded on three sides by sea. The Region is recognised as having some of South Australia's best holiday beaches which contribute to the Region's attraction as a major tourism destination for both local and international visitors. It also contributes to a significant number of non-permanent residents and visitors to the Region.

As well as tourism, the Region's prosperity is built on its fertile soils and agricultural industries with a focus on grains, oilseeds and pulses together with livestock. The Region also hosts significant extractive industries, including limestone, granite, dolomite, gypsum, copper and sand mining, as well as fisheries and manufacturing and construction activities. Health care, retail and education are also important employment sectors for the Region.

Figure 2: The Region







### Regional Adverse Events

The Adverse Events Plan recognises that there will always be adverse events and that an effective management approach must focus on prevention and preparedness as well as response and recovery.

Adverse events have been experienced in the past and can reasonably be anticipated to occur again. With climate change, adverse events are expected to be experienced more frequently and more intensely.

This section provides a summary of the nature of adverse events likely to be experienced by the Region based on trends for Australia, South Australia and the Yorke and Mid North Zone as well as recent experience of the Councils.

Australia experienced its hottest and driest year on record in 2019 according to the Annual Climate Statement 2019 produced by the Bureau of Meteorology (BOM). This included significant heatwaves in January and December, drought across much of the country and widespread severe fire weather.

These climate and weather events were felt across South Australia and the Region. Given the significance of these events, the Adverse Events Plan specifically considers drought as an adverse event.

The Region also forms part of the broader Yorke and Mid North Zone for the purposes of emergency management. Adverse events in the Yorke and Mid North Zone Emergency Management Plan (ZEMP) are described as being:

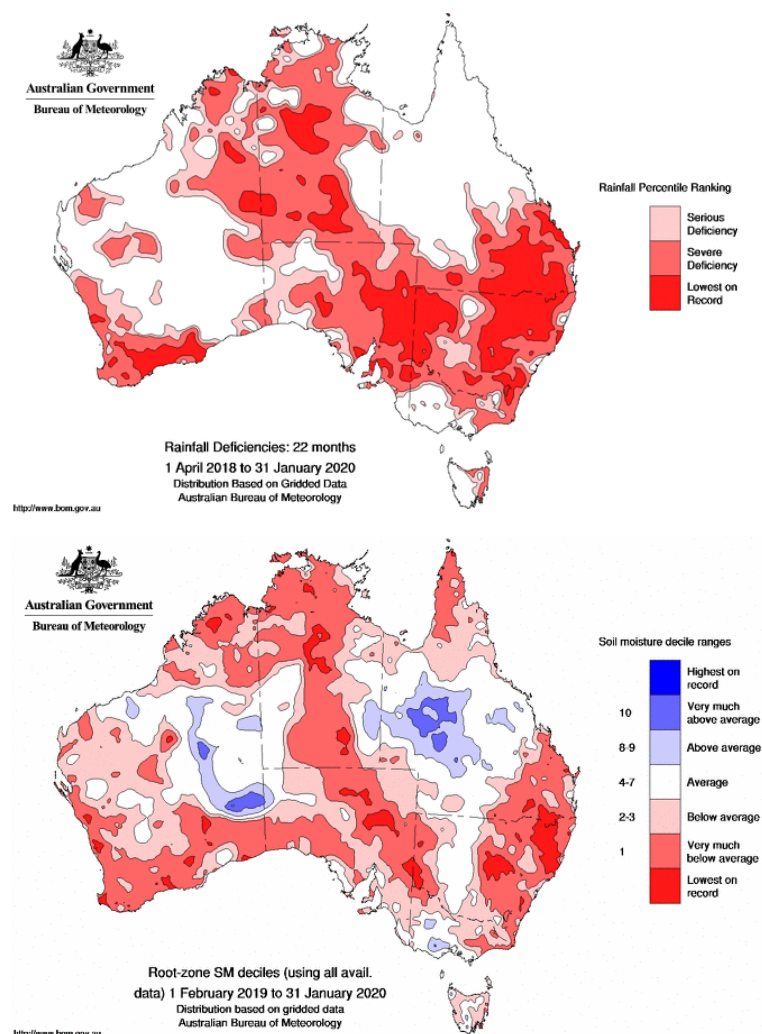
- Rural Fire
- Extreme Heat
- Extreme Storm
- Flood
- Animal and Plant Disease
- Earthquake.

The Region, with its long coastline, is vulnerable to coastal hazards including extreme coastal storm, flooding and inundation. The emphasis in the Adverse Events Plan for flood and extreme storm is on coastal hazards (storm, flooding and inundation) due to the Region's coastal exposure and vulnerability to sea level rise.

Recent trends and current advice in relation to the occurrence of adverse events for South Australia and the Region are summarised below.

#### 1 Drought (Acute Water Shortage)

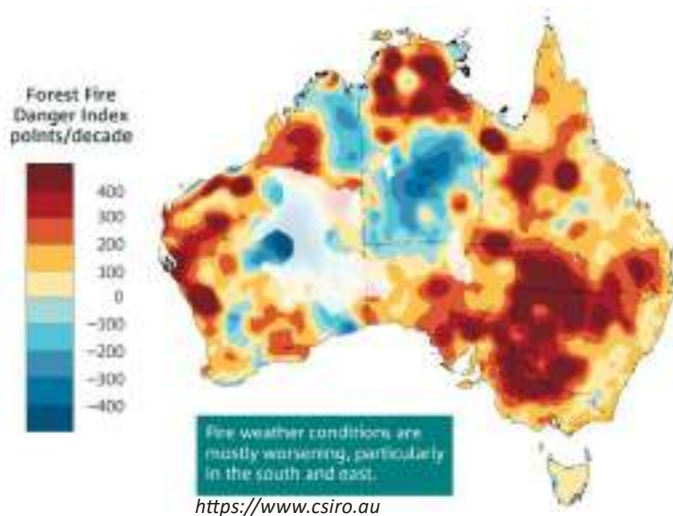
South Australia, like Australia, experienced its driest year on record in 2019 with rainfall 65% below average. In the 12 months to 31 January 2020, the Region also experienced an extended dry period with serious (or severe) rainfall deficiency and below (and very below) average soil moisture.



## 2 Rural Fire

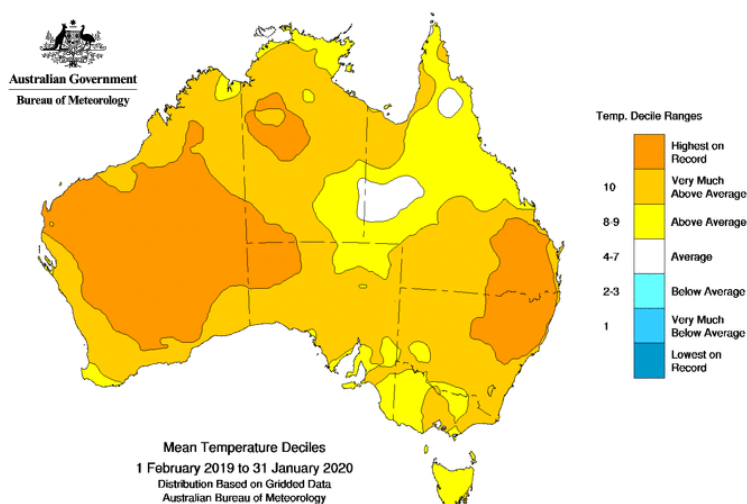
Fire weather in Australia is largely monitored using the Forest Fire Danger Index (FFDI). This index estimates the fire danger on a given day based on temperature, rainfall, humidity and wind speed. Annual trends indicate an increasing length and intensity of the fire weather season.

South Australia can expect six or seven serious fires every 10 years. Recent events in the Region include the Yorketown Fire on 20 November 2019, which burnt approximately 5,017 hectares of land, was attended by over 350 volunteer firefighters, involved 41 aircraft drops, and resulted in the loss of 11 homes and structures. On the same day a bushfire in Price burnt approximately 321 hectares of land. One month later (20 December 2019) a bushfire in Maitland burnt approximately 2,471 hectares.



## 3 Extreme Heat

South Australia experienced more warm days in 2019, with day-time temperatures 2.3°C above average (mean maximum) across the State and the highest on record in many areas of the north and west pastoral districts. Night-time temperatures were closer to average, but still warmer than average in most districts. Overall, it was South Australia's second-warmest year on record. In the 12 months to 31 January 2020, the Region experienced above (and very much above) average mean temperatures and has previously experienced extreme heat events in the order of 13 to 15 consecutive days (2009 and 2008).

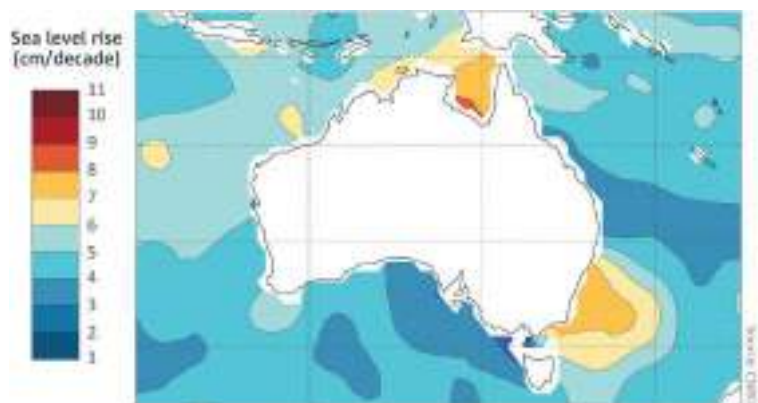


## 4 Coastal Hazards (Extreme Storm, Flood and Inundation)

South Australia experienced an extreme weather event in 2016 which brought thunderstorms, destructive winds, large hailstones and heavy rain triggering a black system event. The region was one of the hardest hit coastal areas during the 2016 extreme storm event with widespread cliff and dune erosion, lowering of beaches and damage to sea walls and jetties.

Sea levels along South Australia's coast have risen by 1.5–4 mm/year between 1965 and 2016, and the rate of rise is projected to increase in the future. Between 1992 and 2017, global sea level reportedly rose by 8 cm (approximately 3 cm decade). Further rises in sea level are projected, with the rate of rise to increase through the 21st century. Rising sea levels are expected to exacerbate the existing impact of coastal erosion and inundation on coastal settlements and natural resources.

Flooding from storm events can occur across the region inundating road networks and lower lying areas. Rain events during high tides can combine to flood coastal settlements.



## 5 Animal and Plant Disease

The Yorke and Mid North ZEMP identifies specific disease hazards for the Region. These include Karnal Bunt/Partial Bunt Disease, Foot and Mouth Disease and Phylloxera Disease.

In 2016, lentil growers on the Yorke Peninsula were affected by the spread of Cowpea Aphids. Isolated reports of Etiella - a sporadic but serious pest of lentils in southern Australia were identified for Yorke Peninsula in the Crop and Pasture Report – Harvest 2018-2019 prepared by Primary Industries and Regions South Australia (PIRSA).

## 6 Earthquake

Australia averages about 80 earthquakes per year with a Richter magnitude (ML) of 3.0 or greater, while an earthquake of ML 5.5 is experienced on average every two years and an earthquake of ML 6.0 is experienced every five years. In Australia, earthquakes with magnitudes of less than 3.5 seldom cause damage while earthquakes of magnitude 4.0 or greater can cause infrastructure and building damage, and trigger landslides. For every unit increase in magnitude, there is approximately a thirty-fold increase in energy released<sup>14</sup>. Earthquake history for the Region shows few earthquakes of magnitude that would be considered of serious detriment to human life (Figure 4 overleaf).







### Coordination and Communication

Emergency Management is governed by various national and state policies and legislation as follows:

- |  |   |
|--|---|
| <b>1 Prevention and Preparedness:</b> <ul style="list-style-type: none"> <li>» National Drought Agreement 2018 (replaces the Intergovernmental Agreement on National Drought Program Reform 2013)</li> <li>» Drought in Australia, Coordinator-General for Drought's advice on a Strategy for Drought Preparedness and Resilience</li> <li>» National Strategy for Disaster Resilience, Council of Australian Governments, February 2011</li> <li>» Emergency Management Act 2004</li> <li>» State Emergency Management Plan (SEMP)</li> <li>» National Emergency Risk Assessment Guidelines (NERAG).</li> </ul> | <b>2 Response and Recovery:</b> <ul style="list-style-type: none"> <li>» National Principles for Disaster Recovery</li> <li>» National Natural Disaster Relief and Recovery Arrangements – Determinations (annual)</li> <li>» Emergency Management Act 2004</li> <li>» State Emergency Management Plan (SEMP)</li> <li>» National Emergency Risk Assessment Guidelines (NERAG)</li> <li>» Flinders Mid-North Yorke Bushfire Management Area Plan (BMAP).</li> </ul> |
|--|---|

### Local Government Sector

The local government sector and Yorke and Mid North RDA Region have actively engaged in planning for (Prevent and Prepare) and supporting response to (Response and Recovery) hazards and adverse natural events:

- |   |   |
|---|---|
| <b>1 Prevention and Preparedness:</b> <ul style="list-style-type: none"> <li>» Yorke and Mid North Zone Emergency Management Plan (ZEMP) Key Hazards and Risks Summary, September 2018</li> <li>» LGA SA Council Ready Program, Emergency Management, Disaster Resilient, Australia Get Ready</li> <li>» Bushfire management committee</li> <li>» Zone Emergency Management Committee.</li> </ul> | <b>2 Response and Recovery:</b> <ul style="list-style-type: none"> <li>» In development – LGA SA Adverse Events Framework (Drought focus).</li> </ul> |
|---|---|

### Coordinating Response to Hazards

Lead agencies assigned to respond to adverse events relevant to the region:

Hazard	Hazard Leader
Animal and Plant Disease	Primary Industries and Regions SA
Extreme Weather	SA State Emergency Service
Earthquake	Department of Planning, Transport and Infrastructure
Fire – Rural	SA Country Fire Service
Flood	Department of Environment and Water

*Risk: Drought could be a gap in adverse event management*

### The Role of Councils

Under the State Emergency Management Plan (Emergency Management Act 2004), the role of local government includes:

- Prevention – build resilience and mitigate risk
- Preparedness - educate communities about emergencies
- Response - support emergency service agencies in response to an emergency
- Response - provide local knowledge to support responses to emergencies
- Recovery - support the community during recovery.

Councils require policies and plans that guide coordinating resources and effective communication when responding to hazards and adverse natural events.

*Risk: Councils should have current community emergency management plans, emergency management policies and public consultation policies that address communication during emergency situations.*



### Natural Resources

#### Surface Water

The Region is estimated to have over 2,500 surface water areas, most of these relate to private surface water dams, small reservoirs, lakes, lagoons and swamps. The 'heel' of Yorke Peninsula (near the township of Yorketown) is characterised by over 100 circular salt lakes. There are no major river systems in the Region.

*Strength: There are no Prescribed Surface Water Areas or Prescribed Watercourses in the Region which provides an indication that surface water resources are currently within sustainable limits.*

#### Wetlands

Wetlands of National Significance in the Region are:

- Innes National Park - salt-lake system
- Clinton - mangrove and samphire estuarine area
- Point Davenport - semi-stranded lagoon
- Native Hen Lagoon
- Gum Flat near Minlaton – the last remaining seasonally inundated forest of Eucalyptus camaldulensis (Red Gum) on the Yorke Peninsula
- Wills Creek – consisting of two tidal creeks (Wills Creek and Shag Creek) which form shallow estuaries at Mangrove Point.

#### Groundwater

The Region's groundwater is characterised as both fractured rock and shallow sedimentary basins. The northern part of the Region is within the Pirie Basin (shallow sedimentary basin) which extends north outside of the Region. South of the Pirie Basin through the central part of the Region is Gawler Craton (fractured rock). The southern part of the Region is characterised by shallow sedimentary basins (Troubridge Basin toward the 'heel' of the Peninsula and Para Wurlie Basin at the 'toe' of the Peninsula). The eastern coastline of the Peninsula forms part of the St. Vincent basin (shallow sedimentary basin) that extends to land east of the Gulf St Vincent outside of the Region.

There are approximately 109 known bores in the Region.

*Strength: The groundwater resources in the Region are neither within a Prescribed Water Resources Area or a Prescribed Wells Area and as such are not subject to water allocation plans. This provides an indication that groundwater resources are currently within sustainable limits.*

#### Biodiversity

The Region is home to diverse flora and fauna including a record of 1,882 native flora species and 467 native fauna species.

Of the flora species, 86 are threatened species of State significance (64 are rated, 13 vulnerable and 9 endangered). This includes 10 species of National significance (6 vulnerable and 4 endangered).

There are approximately 80 threatened fauna species of State significant known in the Region (including 44 rare, 13 vulnerable and 10 endangered). Of these threatened fauna species, 22 are of National significance and include:

- Critically endangered species: Curlew Sandpiper, Great Knot, Far Eastern Curlew, Plains-wanderer.
- Endangered species: Southern Giant Petrel, Leatherback Turtle.
- Vulnerable species: Slender-billed Thornbill (Gulf St Vincent), Greater Sand Plover, Malleefowl, Hooded Plover, White-bellied Whipbird (eastern subspecies) Fairy Tern, Australian Sea Lion, Green Sea Turtle.

Introduced species to the Region include 584 flora species and 39 fauna species (19 fish species, 9 bird species and 11 mammals).

Approximately 12 introduced flora species are identified as weeds of national significance including: Bridal Creeper, Cane Cactus, Boneseed, English Broom, African Boxthorn, Prickly Pear, Willow, Silver-leaf Nightshade, Athel Pine and Gorse.

Priority weeds have been identified as: White weeping broom, Buffel Grass, Calomba Daisy, Caltrop, Creeping knapweed, Horehound, Khaki Weed, and Lincoln Weed.

*Risk: Protection of biodiversity and management of introduced species has economic implications for the region's agricultural, fishing and tourism industries.*

#### Coast and Estuary

The Region's coastline is reported to contain many plants and animals that are threatened and declining and some species that are unique to the area. Migratory shorebirds are known to use the Region while the Spencer Gulf and Gulf St Vincent are critical sheltered environments for marine diversity.

Yorke Peninsula Council has approximately 485 kilometres of coastline including cliffs, beaches, estuaries, rocky reefs, long low-energy beaches, mangroves and samphire flats. The coastal environment supports a diversity of marine and terrestrial flora and fauna of both national and international significance.

Estuary environments can be found at Wills Creek, Pavy Creek, Salt Creek/Coobowie Inlet and Point Davenport in the Yorke Peninsula Council area and Port Broughton in the Barunga West Council area.

Australian sea lion colonies and seabird sites are known of at the head of the Peninsula and its islands while sites for coastal wading birds occur along the Region's coastline.

*Risk: Coastal landscapes are both sensitive and directly susceptible to extreme weather (storms). Councils will require infrastructure standards and/or coastal management plans to address coastal vulnerability.*

## Conservation and National Parks

Two National Parks are found in the Region and information is readily available on each park including emergency contacts and bushfire closures.

- 1 Innes National Park is a premier park known for its birdlife including hooded plover (threatened), malleefowl (endangered) and ospreys. The park includes a population of tammar wallabies and has nearby breeding grounds for sea lions and seabirds. The park conserves a significant proportion of the remaining habitat on southern Yorke Peninsula.
- 2 Troubridge Island Conservation Park is an important nesting and breeding area for seabirds and home to a large colony of little penguins, black-faced cormorants and crested terns.

Other conservation parks and nature reserves in the Region include:

- » Bird Islands Conservation Park
- » Goose Island Conservation Park
- » Wills Creek Conservation Park
- » Clinton Conservation Park
- » Carribee Conservation Park
- » Leven Beach Conservation Park
- » Minlacowie Conservation Park
- » Point Davenport Conservation Park
- » Ramsay Conservation Park
- » Warrenben Conservation Park
- » Thidna Conservation Park
- » Clements Gap Conservation Park
- » Bute Fauna Park

## Marine Parks

South Australia has created a system of marine parks under the Marine Parks Act 2007 which aim to protect the marine environment, its biodiversity and native species. The parks protect critical habitat such as seagrass meadows, reefs and mangroves, feeding and breeding sites for marine animals and birds as well as fish and shellfish nursery areas.

Four of South Australia's 19 marine parks, are in the Yorke Peninsula area:

- **Eastern Spencer Gulf Marine Park**  
Located on the eastern side of the Spencer Gulf, just north of Port Rickaby and extending to Cape Elizabeth, the park encompasses the islands and waters of Goose Island Conservation Park and Goose Island Aquatic Reserve.
- **Southern Spencer Gulf Marine Park**  
Borders Innes National Park and includes several offshore islands and takes in the deep waters of Investigator Strait and the rugged north coast of Kangaroo Island.
- **Lower Yorke Peninsula Marine Park**

Located around the heel of Yorke Peninsula, from Point Davenport Conservation Park to Stansbury, the park includes Troubridge Island and the surrounding shoals.

- **Upper Gulf St Vincent Marine Park**

Located north of Parara Point to the northern end of Port Gawler Beach.

Significant species identified for the area include more than 40 species of migratory shorebirds, King George whiting and mangrove forests. Each marine park has in place a management plan and management zones.

*Strength: The Region has a rich natural environment, flora and fauna that offers high value and diverse visitor experiences that should contribute to a strong and growing tourism economy and protected marine habitats that underpin a healthy fishing industry.*

## Soil (Productive Land)

The Northern and Yorke region's soil is a critical asset to agricultural productivity and natural biodiversity. The characteristics of soil are one of the key factors that determine where different crops may be grown and the natural distribution of native plant species. The soil also provides habitat for a range of plants and animals; burrowing mammals, marsupials and reptiles, invertebrates and microbial organisms.

The region's soils are characterised as:

- **Yorke Peninsula**  
A plain of loam over clay, shallow calcrete or calcareous loams with some areas of dunefields and saline land. Wind and water erosion, soil fertility and salinity are the main soil degradation issues.
- **Coastal plain**  
Shallow calcrete and calcareous loams with some areas of dune-swale and sand. Wind erosion and saline soils are the main issues.

More intensive and productive farming systems with higher nitrogen use, grain and pasture legumes in the rotation and higher yields can increase the rate of soil acidification.

*Risk: Soil acidity is an emerging and increasing problem in many areas of the Mid North and on the 'red' soils of the Yorke Peninsula that can reduce crop and pasture production.*





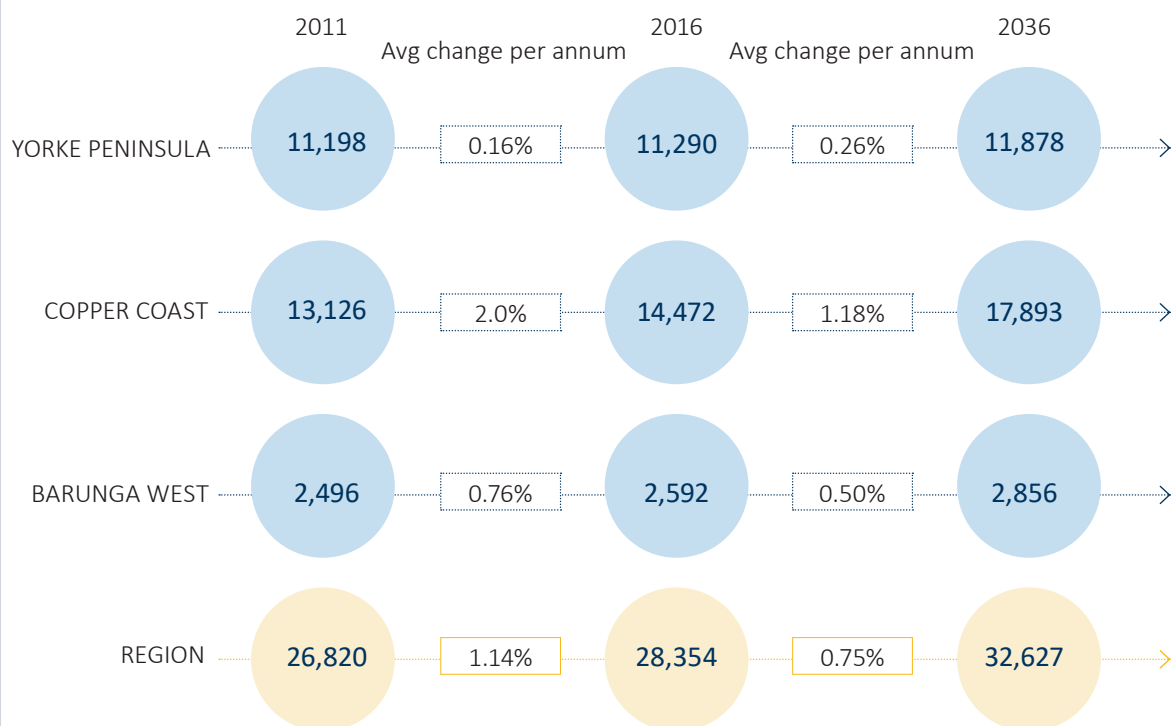
## Community Resilience and Economic Diversification

## Current and Future Population

The Region has experienced, and is projected to continue experiencing, modest population growth (Figure 5). Population for the Region is forecast to grow by over 4,200 persons between 2016 and 2036 to a total population of just over 32,620 persons.

Copper Coast has demonstrated the strongest population growth in the Region since 2011 in both numbers (+1,346 persons) and growth rate (2.0%p.a.) and is projected to remain the fastest growing Council to 2036.

Figure 5: Population growth and projections



## Service Age Groups

The Region is characterised by an older population with 39.2% of the population aged over 60 years in 2016. The proportion of the population aged 60 years and over was higher in Yorke Peninsula Council (42.3%) and Barunga West (41.7%) compared with the Copper Coast (36.4%). The age profile for Copper Coast was slightly more distributed and more closely reflected the age profile for the broader Regional Development Australia (RDA) Yorke and Mid North Region (RDA Region).

The population in the Region is continuing to age with persons aged 60 years and over the fastest growing segment of the population between 2011-2016 (+1,616 persons). Most of this increase in the population over 60 years occurred in Copper Coast (+929 persons) followed by Yorke Peninsula (+515 persons) and Barunga West (+172 persons).

**Risk:** The Councils should consider the implications of an ageing community for the management of adverse events as well as for meeting future service demands and supplying labour for common employment sectors.

## Households

In 2016, the Region was characterised by a higher proportion of 'couples without children' households compared with the broader RDA Region.

Couples without Children	2016 (%)
The Region	34.3
Yorke Peninsula Council	35.5
Copper Coast Council	33.2
Barunga West	34.9
RDA Region	31.2

Each of the Councils experienced an increase in the number of 'lone person' households between 2011 and 2016, the greatest increase was for Yorke Peninsula (+118).

Lone Person Households	2011-16
The Region	+317 h/holds
Yorke Peninsula Council	+118 h/holds
Copper Coast Council	+177 h/holds
Barunga West	+22 h/holds

**Risk:** An ageing population and an increasing number of lone person households may have implications for communication, transport and evacuation of a vulnerable and growing segment of the community.



## Dwelling Types & Household Size

The Region has a predominance of separate houses (over 90% of dwelling types), which is also the case for the individual Councils.

Separate Houses	2016 (%)
The Region	92.8
Yorke Peninsula Council	94.1
Copper Coast Council	91.3
Barunga West	93.1

Since 2001 average household sizes (people per household) have become smaller:

Average Household Size	2011	2016
Yorke Peninsula Council	2.29	2.08
Copper Coast Council	2.30	2.18
Barunga West	2.36	2.09

*Risk: As the community ages and household sizes reduce there may be a growing discrepancy between dwelling type and household type that may limit options for residents to 'retire in place' without home-based assistance and care.*

## Dwelling Occupancy

The Region is characterised by low dwelling occupancy rates (61%) compared with the broader RDA Region (73.7%). For Yorke Peninsula Council, unoccupied dwellings (48.2%) were nearly double the broader RDA Region (25.9%). Unoccupied dwellings in Yorke Peninsula Council increased between 2011 and 2016 by 187 dwellings.

2016 Dwelling Occupancy	Unoccupied Dwellings %	Occupied Dwellings %
The Region	38.8	61.0
Yorke Peninsula Council	48.2	51.2
Copper Coast Council	28.3	71.5
Barunga West	38.7	61.2
RDA Region	25.9	73.7

The number of occupied dwellings increased between 2011 and 2016 in both Copper Coast (+631) and Barunga West (+47). For Barunga West this increase occurred at a similar quantum to the decrease in unoccupied dwellings. This could be an indication of holiday homes transitioning to permanent housing. For Copper Coast it is more likely a reflection of the development of new permanent dwellings.

*Risk: With between almost 40% - 50% of private dwellings unoccupied in Yorke Peninsula Council and Barunga West Council there is likely to be a high transient population. This may present challenges for communication and for management of properties for the effective reduction of fire loads. Coastal settlements are vulnerable to sea level rise and sea flooding which warrant specific emergency procedures.*

## Migration

Population movements between 2011 and 2016 show the Region experienced both inward (+1,337 persons) and outward (-1,030 persons) migration of the working population (aged 25-34 years). The exchange of Region's population was most commonly with the outer northern (north-western) metropolitan areas of Adelaide except for the City of Onkaparinga (southern Adelaide).

Migration *into* the Region between 2011-16:

- City of Salisbury (+671 persons);
- City of Playford (+579 persons);
- City of Onkaparinga (+482 persons);
- Port Adelaide Enfield (+448 persons); and
- Tea Tree Gully (+363 persons).

Highest inward migration: 25-34 years (1,337). Biggest net population gain: 55+ years (2,396).

Migration *out of* the Region between 2011-16:

- City of Playford (566 persons);
- City of Charles Sturt (478 persons);
- City of Salisbury (444 Persons);
- Port Adelaide Enfield (384 Persons); and
- City of Onkaparinga (375 Persons).

Highest outward migration: 25-34 years (1,030). Biggest net population loss: 18-24 years (1,880 left the region with a net loss of 1,431 persons).

The Region is generally losing population in the younger age segments and gaining persons in the older age segments. The greatest net population loss from the Region was for persons aged between 18-24 years (-1,880 persons with a net loss of -1,431 persons). This segment of the population is commonly associated with tertiary education and independence. The highest inward migration for the Region was for the population aged 55 years and over (+2,396 persons).

*Risk: Combined, the highest population loss for the region is persons aged 18 – 34 years and the greatest population gain is for persons over 55 years of age. Improved retention of younger populations and the strategies to attract this segment of the population back to the Region are likely to be important elements of future community resilience.*

## Mobility

Most people in the Region relied on private motor vehicles for transport to work in 2016 (65.2%). This was highest for Copper Coast (72.8%) followed by Yorke Peninsula (58%) and Barunga West (56.1%). Interesting, Barunga West had a high proportion of the population reporting they worked from home (17.7%). Most households in the Region owned two or more private vehicles in 2016 (52.7%) while a small but important proportion owned no motor vehicle (4.7%).

Car Ownership in 2016	None	Two or more
The Region	4.7%	52.7%
Yorke Peninsula Council	4.2%	54.2%
Copper Coast Council	5.1%	51.0%
Barunga West	4.3%	54.1%

**Risk:** Given the reliance on the private motor vehicle it can reasonably be assumed most people would use cars to evacuate the Region if necessary. Road infrastructure should therefore be a priority when managing adverse events as well as consideration given to households with no motor vehicle.

## Culturally and Linguistically Diverse (CALD) Communities

In 2016, 9.1% of the population in the Region were born overseas most commonly the United Kingdom, Germany and New Zealand. 1.8% of the population spoke a language other than English at home. Approximately 37 people who spoke a language other than English at home reported difficulty speaking English.

## Other Vulnerable Communities

The Region includes a high transient population who may be vulnerable to adverse events. Other potentially vulnerable communities may include people experiencing disability or unemployment and people identifying as Aboriginal and Torres Strait Islander. In 2016, approximately 2,215 people or 8% of the population in the Region reported needing help in their day-to-day lives due to disability. A significant proportion of these people were in the older age groups. The Region experienced 7.3% unemployment rates and had 736 people who identified as Aboriginal and Torres Strait Islander (2.7%).

**Risk:** Some segments of the population may require targeted assistance during adverse events.

## Volunteers

The Region reported 30% of the population or 7,100 people doing some form of voluntary work in 2016. Volunteer rates were higher in Yorke Peninsula (34.2% and 3,262 people) and Barunga West (34.3% and 753 people) compared with Copper Coast (25.8% and 3,085 people).

**Strength:** The proportion of volunteers in the community may indicate a good propensity for people to assist in managing adverse events.

## Economic Diversity

Economic diversity for townships/regions can be characterised by the distribution of employment by industry. The greater the number of sectors representing over 5% of total employment, the more diverse and less vulnerable the local economy could be.

Economic vulnerability can also be influenced by:

- The degree of interdependence between the main employment sectors (eg retail revenue and logistics, such as transport and warehousing, can be dependent on the seasonal success of agriculture).
- Significant activities occurring at any point in time (eg larger scale construction projects).
- The population base of the catchment being assessed.

**Table 1 Top employment industries**

INDUSTRY	PROPORTION OF TOTAL EMPLOYMENT
<b>YORKE PENINSULA</b>	
Agriculture Forestry and Fishing	25.7%
Health Care	13.1%
Retail	9.0%
Education	8.7%
Accommodation and Food	7.1%
Construction	5.9%
Manufacturing	5.3%
<b>BARUNGA WEST</b>	
Agriculture Forestry and Fishing	38.5%
Health Care	17.1%
Education	6.1%
Accommodation and Food	5.3%
Retail	5.1%
<b>COPPER COAST</b>	
Health Care	17.1%
Retail	16.7%
Construction	9.6%
Education	8.7%
Accommodation and Food	8.4%
Other	5.5%
Agriculture, Forestry and Fishing	5.4%
Public Administration	5.3%

The employment diversity of the Copper Coast is likely to reflect the scale of towns within its Council area such as Kadina, Wallaroo and Moonta. Equally Maitland, Edithburgh and Minlaton contribute to a greater degree of employment diversity in Yorke Peninsula when compared with Barunga West.

According to Profile ID journey to work data, the broader RDA Region (more localised data not available) records 94% of its population as living and working within the area. This supports the potential to collectively view the existing economic diversity of the three Councils and suggests there is enough diversity and availability of employment<sup>1</sup>.

*Risk: Yorke Peninsula Council and Barunga West Council may need to consider strategies for economic diversification in conjunction with retention strategies for younger populations.*

### Employment and labourforce

Employment across the Region was 92.7% in 2016. The number of employed persons declined between 2011-2016 (-26 persons) but overall labour force increased (+164 persons) largely as a result of part-time employment (+219 persons).

Employment was higher in Yorke Peninsula (94.3%) and Barunga West (94.1%) compared with Copper Coast (91.2%). Across the Region there was generally a reduction in full-time and increase in part-time employment between 2011 and 2016.

**Table 2 Change in employment between 2011-2016**

Employment Change	Employed	Full-time	Part-time	labour force
The Region	-26	-265	+219	+164
Yorke Peninsula	-138	-172	+27	-85
Copper Coast	+128	-41	+157	+256
Barunga West	-16	-52	+35	-7

All Councils recorded under 50% participation in labour:

- Copper Coast Council (45.5%)
- Yorke Peninsula Council (45.2%)
- Barunga West Council (44%).

### Tourism

Yorke Peninsula, Copper Coast and Barunga West currently form part of the Yorke Peninsula Tourism Region. For the 12 months ending June 2019 the region recorded:

- \$200M visitor expenditure;
- 527K Overnight visitors:
  - » 11% Interstate overnight visitors
  - » 87% Intrastate overnight visitors
  - » 2% International overnight visitors
- 1.7M visitor nights
- 680K domestic day trips
- Nearly 450 businesses contributing to the visitor experience; and
- Contributes to 1,300 direct employment.

The impact of tourism on local employment is also reflected in Table 1 which identifies Accommodation and Food within the top 5 employment generators for each Council.

### Local Jobs

The Region had 10,139 jobs at June 2019. This reflected an increased of 31 jobs or 0.31% increase from the previous year.

### Number of businesses

The Region had 2,543 businesses in 2019, an increase of 24 businesses from 2009 (2,519). Businesses in the Region represent 17 different industries and comprise:

- 1,571 self employed businesses;
- 948 Small to medium businesses (1-19 employees); and
- 28 Big businesses (20-199 employees).

### Local Jobs Composition

The Region is characterised by the National Institute of Economic and Industry Research (NIEIR) as having six key overarching industries offering local employment. Local employment has increased by 423 jobs between 2009 and 2019 largely influenced by a:

- Reduction in Agriculture, forestry and fishing (-284) and Goods related (-203) jobs; and
- Growth in Household services (688) jobs.

**Table 3 Local employment offering by sector**

Employment in the region by sector	2019 %	2009 %.	change (number of jobs)
Household services	36.8	31.3	688
Goods related	32.3	35.8	-203
Agriculture, forestry and fishing	16.5	20.1	-284
Business services	8.7	7.9	110
Public administration and safety	4.6	3.8	105
Mining	1.1	1.1	7
Total	100	100	423

### Regional output

The Region recorded a Gross Regional Output of \$1.29B in 2019; a growth of 0.1% since 2018 and slightly higher than the Mid North Region (\$1.21B) and Southern Flinders Region (\$1.23B) at the same point in time. The local industry to resident GRP ratio is 0.92 which reflects a reasonably high level of working and spending within the same community.

*Strength: The Region exhibits a reasonably strong, steady and diverse local economy offering reasonable opportunities for local employment (0.94 job to worker ratio).*

## Aged Care and Disability Services

According to the standard rate of provisions of aged care beds for persons aged above 70 years (12.5 beds for every 100 persons), existing age care facilities located in Barunga West and Copper Cove areas are adequate to supply existing demand.

The Yorke Peninsula region currently fails to meet standard (12.5 beds for every 100 persons) by 5 beds.

As the population ages/increases, aged care facilities located in Barunga West and Yorke Peninsula may struggle with demand.

## Social Connections

The region is well serviced with social connection facilities including churches, community centres and public libraries.

## Emergency Services

All areas have suitable emergency services which will remain adequate given the 2018 estimated population figures for each area.

## Community Leadership and Participation

All areas have adequate access to community leadership and participation groups/organisations, namely Probus, Lions, Rotary and RSL Clubs.

## Supermarket and Grocers

Yorke Peninsula Council has approximately 1 supermarket or grocer for every 1,618 persons; Copper Coast Council has approximately 1 supermarket or grocer for every 2,974 people, and Barunga West Council has 2.1 supermarket or grocer for every 1,275 people. In total there are 14 supermarkets or grocers distributed across the region.

## Education

Based on standard rates of 1 primary school per 3,000 dwellings and 1 high school per 11,000 dwellings, the number of schools within the Region sufficiently services the population.

## Health and Medical

All medical centres or hospitals within the region are supported by at least one general practitioner and nurse with some supported by 2 or more general practitioners or specialists. Using a rate of 1.3 doctors per 1,000 people (average rate of FTE GPs per population across SA in 2015 -2016) suggests the region is appropriately serviced to support its current population.

## Electricity and Water

A review of essential infrastructure identifies a good distribution of SA Water mains and South Australia Power Network high voltage electricity supply and sub stations.

*Strength: The Region is well serviced by a range of supermarket, education, health and social services and facilities and community access to well distributed water and power supply.*

The following figures illustrate the supply and distribution of social infrastructure across the region:

Figure 6: Copper Coast Social Infrastructure

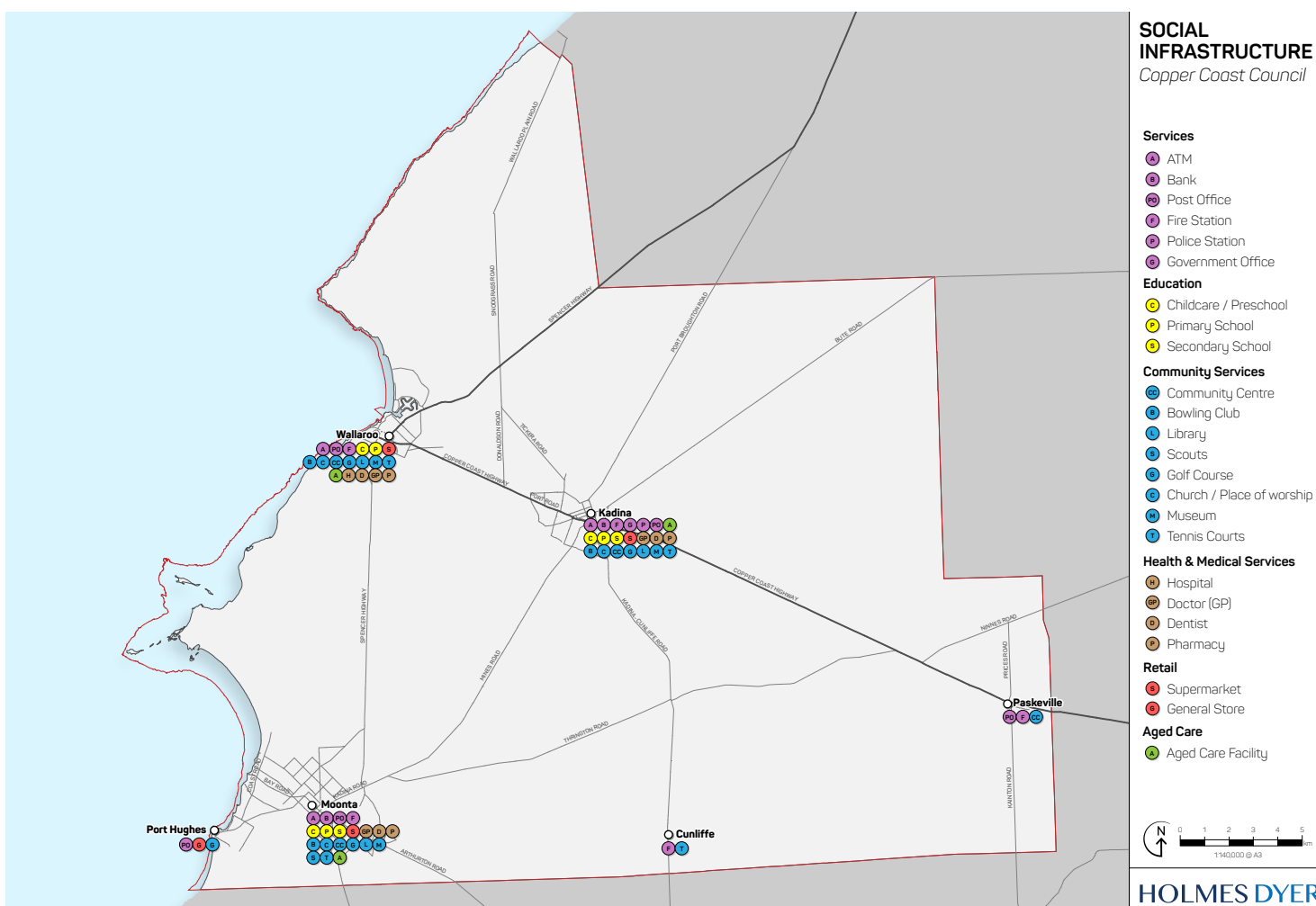


Figure 7: Yorke Peninsula Social Infrastructure

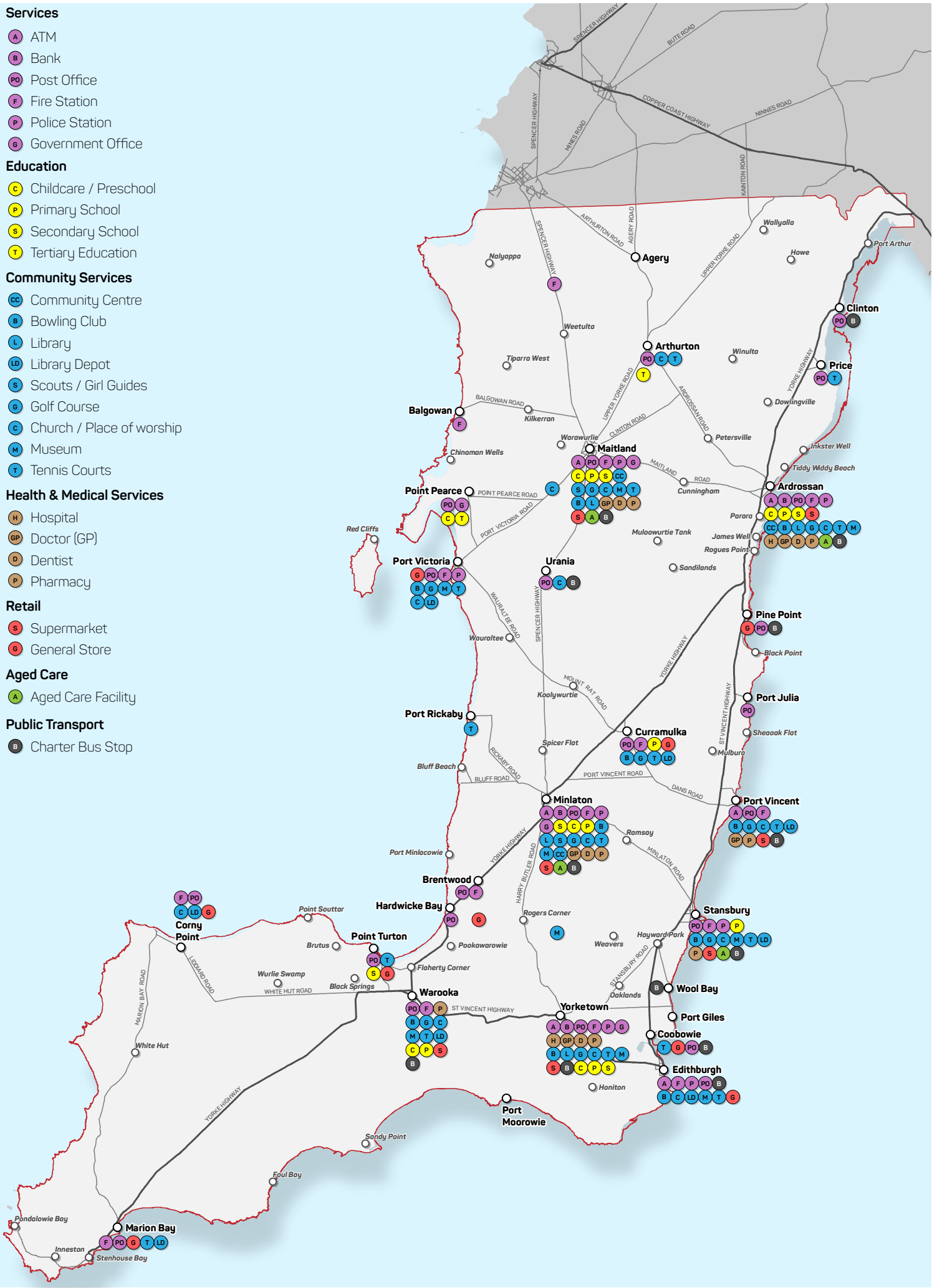
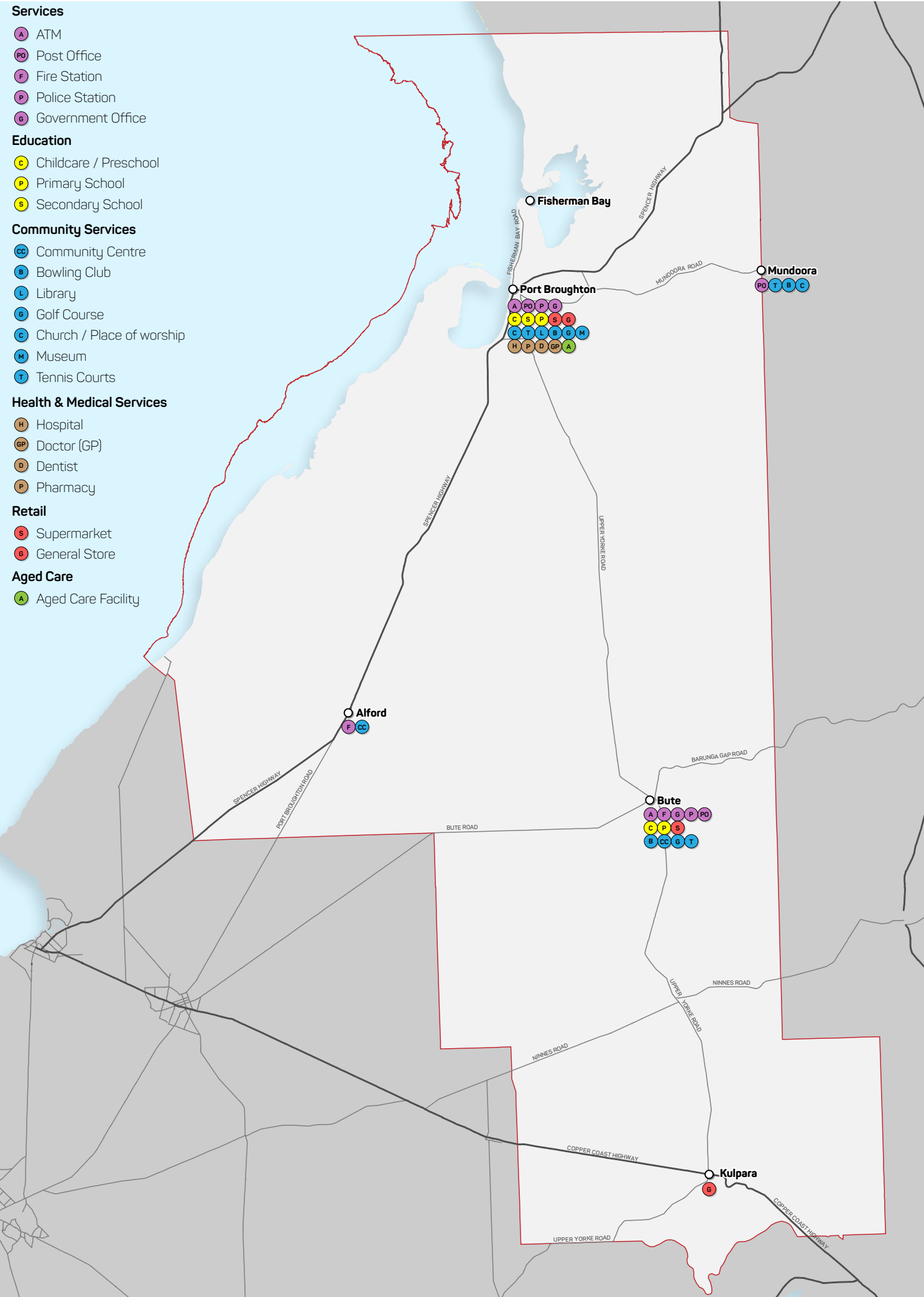
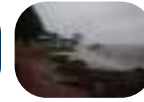




Figure 8: Barunga West Social Infrastructure





### Framework Based Assessment

#### How risks of adverse events are being planned for and managed

The following section will assess the extent to which the region and its stakeholders address the:

- Risk and impact of adverse natural events relevant to the region;
- Coordination and communication requirements in planning for and responding to adverse natural events; and
- Environmental, social and economic vulnerabilities of the region.

The framework is informed by an extensive (but not exhaustive) review of plans, policies, procedures and programs in place at a federal, state, regional and local level.

The assessment identifies:



Clear evidence of planning, management, coordination or resourcing of approaches to mitigating or responding to identified risks



Partial, indirect or in development planning, management, coordination or resourcing of approaches to mitigating or responding to identified risks



Limited or no contribution to planning, management, coordination or resourcing of approaches to mitigating or responding to identified risks

Ardrossan Beach Access storm tide May 2016



Ardrossan beach access storm tide May 2016

*Risk 1: Drought could be a gap in adverse event management*

Adverse Event	Federal Plan	State Plan	Regional Plan	Sector Plan	Council Plans	Policy or Procedure	Media or Publication
Drought	✓	—	✗	—	✗	✗	✗
Rural Fire	✓	✓	✓	✓	✓	✓	✓
Extreme Heat	✓	✓	✓	✓	✓	✓	✓
Coastal Hazards	✓	✓	✓	✓	✓	✓	✓
Animal and Plant Disease	✓	✓	✓	—	—	—	—
Earthquake	✓	✓	✓	✓	✗	✓	✗

## Summary

At a Federal level the National Drought Agreement (2019) and the Australian Government Drought Response, Resilience and Preparedness Plan (2019) addresses drought as a unique topic impacting community and economic resilience. The Coalition of Australian Governments National Strategy for Disaster Resilience (2011) provides overarching strategies and priorities for governments and communities preparing for and responding to a range of adverse events.

More generally the State addresses key hazards and nominates lead agencies. This then translates to agency lead planning and management. For example the CFS takes carriage of regional approaches to rural fire planning and management for the Yorke and Mid North region. PIRSA has developed an Adverse Events Recovery Framework targeting the impacts of drought on primary production.

The Local Government Association 'Council Ready' Program and supporting emergency management framework provides guidance for planning, operating and recovering from adverse events relevant to each region.

Together PIRSA and the LGA SA are developing an Adverse Events Management Plan, to add value to the existing Council Ready Program, focusing on drought.

Councils have readily available information online directly promoting or educating the community (eg. Fire safety) or directing the community to resources on adverse events (such as storms and flood).

Council's generally have policies that require monitoring and resourcing for the risk of adverse events and outline actions in the event of an emergency.

*Recommendation 1: Councils could complete the Drought Focused LGA/PIRSA Adverse Event Management Plan to enhance its existing planning and management of adverse natural events.*





*Risk 2: Councils should have current community emergency management plans, emergency management policies and public consultation policies that address communication during emergency situations.*

Adverse Event	Sector Planning	Council Planning	Policies and Procedures	Structures or Systems	Media and Publications
Drought	—	✗	✗	—	—
Rural Fire	✓	✓	✓	✓	✓
Extreme Heat	✓	✓	✓	✓	✓
Coastal Hazards	✓	✓	✓	✓	✓
Animal and Plant Disease	✓	✓	✓	✓	✓
Earthquake	✓	✓	✓	✓	✓
<p>Summary</p> <p>The Zone Emergency Management Plan (ZEMP) provides a comprehensive overview and guide to the coordination of resources by Councils in response to adverse events. This includes collaboration between the Yorke and Mid North Zone Emergency Management Committee and the local government sector governance structures organised under the LGA emergency management framework.</p> <p>Councils work with the LGA and the Yorke and Mid North Zone Emergency Committee to perform roles required of local government as identified in the State Emergency Management Plan. This support is identified in Council policy and procedures including communication policies. All Councils have social media, online information and publications that distribute information to targeted audiences immediately, on demand or cyclical.</p> <p>Sector planning is underway between the LGA and PIRSA to establish a coordinated approach to drought monitoring, preparation and response.</p>					
<p><i>Recommendation 2: Councils can look at the planning, policy, coordination and communication requirements for managing region wide drought impacts as a component of undertaking the LGA/PIRSA Adverse Event Management Plan.</i></p>					



State Plan	Regional Plan	Sector Plan	Council Plans	Policy or Procedure	Media or Publication
<i>Risk 3: Protection of biodiversity and management of introduced species has economic implications for the region's agricultural, fishing and tourism industries.</i>					
✓	✓	✗	✓	✓	✓
<i>Risk 4: Coastal landscapes are both sensitive and directly susceptible to extreme weather (storms). Councils will require infrastructure standards and/or coastal management plans to address coastal vulnerability.</i>					
✓	✓	✗	✓	✓	✓
<i>Risk 5: Soil acidity is an emerging and increasing problem in many areas of the Mid North and on the 'red' soils of the Yorke Peninsula that can reduce crop and pasture production.</i>					
✓	✓	✗	✗	✗	✗
<p><b>Summary</b></p> <p>The Natural Resources Yorke and North Strategic Plan (2019-2029) outlines key strategies for protecting flora and fauna and managing the impact of introduced species (weeds and predators) on habitat and populations. It also covers soil management to balance productive land uses (agricultural systems and grazing systems) including the management of soil acidification through improved agricultural practices, in balance with environmental services. These are translated into funded activities within the Natural Resources Yorke and North Business Plan (2019-2022). PIRSA and the NRM Yorke and North (State and Regional bodies) most appropriately deal with soil management. Councils have limited if any role.</p> <p>The National Parks and Wildlife Service of South Australia governs marine parks across the region that protect highly valuable marine habitats, support tourism and fisheries. The State's 'Growth State' prioritises the health and wellbeing of the agricultural sector and has a pipeline of strategic initiatives to boost resilience and productivity including pest management.</p> <p>Legatus (Central Local Government Region and regional subsidiary established under the Local Government Act) in collaboration with Natural Resources Yorke and North have drafted a Coastal Management Action Plan (2019) for improved protection, conservation and management of the coast.</p> <p>Yorke Peninsula has further localised planning and management of its significant coastal exposure through a series of seawater studies to provide adaptation options for coastal communities, and a Coastal Management Strategy to provide guidance on the most appropriate ways to enhance opportunities for coastal access and recreation, in balance with landscape and biodiversity protection.</p> <p>A review of Asset Management Plans identified the potential to review and update infrastructure asset management plans to include more comprehensive consideration of climate change and adverse events on Council assets and infrastructure. Yorke Peninsula Council is currently undertaking a Strategic Coastal Risk Study that may address this gap within its Asset Management Plan.</p> <p>Roadside Vegetation Management Plans are in place supported by policy and procedure and there is evidence of media, online information and publications.</p>					
<i>Recommendation 3: There is scope for Council to better consider climate resilience as part of asset lifecycle planning and funding within infrastructure asset management plans and where specifying and budgeting for contract construction works.</i>					





## Community Resilience and Economic Diversification

State Plan	Regional Plan	Sector Plan	Council Plans	Policy or Procedure	Media or Publication
<i>Risk 6: The Councils should consider the implications of an ageing community for the management of adverse events as well as for meeting future service demands and supplying labour for common employment sectors.</i>					
—	✓	✗	—	✗	✗
<i>Risk 7: An ageing population and an increasing number of lone person households may have implications for communication, transport and evacuation of a vulnerable and growing segment of the community.</i>					
✓	✓	✗	—	✓	✓
<i>Risk 8: As the community ages and household sizes reduce there may be a growing discrepancy between dwelling type and household type that may limit options for residents to 'retire in place' without home-based assistance and care.</i>					
✓	✗	✗	—	✓	✓
<p><b>Summary</b></p> <p>The RDA Regional Road Map 2018- 2028 provides direction, including key initiatives, to supply a labour force to meet the needs of key sectors and to meet future service demands in general and those generated by an ageing population in regional townships (health sector and professional/allied services). The RDA also provides an ID statistical tool available to Councils and stakeholders that provides information at a Council, sub regional or regional level. The tool enables economic and demographic insights that support contextually relevant strategic planning.</p> <p>The State's 'Growth State' economic priorities identify the importance of agricultural industries to the State's prosperity however there is limited evidence of actions or interventions to workforce populations within regional townships. The recently announced extension of the Designated Area Migration Agreements does not appear to include postcodes within the region.</p> <p>The State Emergency Services run heatwave awareness campaigns that have been evaluated as successful in raising general community awareness. At a regional level, the The Yorke and Mid North Zone Emergency Management Plan has identified opportunities for evaluating and improving the effectiveness of communication in the lead up to and during extreme heat events.</p> <p>The State Government, through the State Public Health Plan provides for an extreme heat warning and preventative interventions for vulnerable and the elderly that has reduced morbidity of heat waves (and now for pandemics).</p> <p>There is reference to elderly populations being vulnerable to hazards such as storm, fire and heat within Council Community Emergency Risk Management Plans and acknowledgment of the elderly population in the region in all Council Strategic Management Plans, but there is limited content outlining strategies or approaches to this community context whether in regard to hazards or community resilience and sustainability.</p> <p>At a State level the 30 Year Plan for Greater Adelaide seeks housing diversity to meet changing household needs in townships which includes options for more compact dwellings, independent living and retirement living. As direct service providers each Council has well established policies, procedures, programs and publications/media supporting the wellbeing of residents as they age in place.</p>					
<i>Recommendation 4: The risk of the ageing population, lone person households and the potentially limited evacuation routes on the peninsula could be more clearly translated and addressed in emergency planning.</i>					



## Community Resilience and Economic Diversification

State Plan	Regional Plan	Sector Plan	Council Plans	Policy or Procedure	Media or Publication
<i>Risk 9: With between almost 40% - 50% of private dwellings unoccupied in Yorke Peninsula Council and Barunga West Council there is likely to be a high transient population. This may present challenges for communication and for management of properties for the effective reduction of fire loads. Coastal settlements are vulnerable to sea level rise and sea flooding which warrant specific emergency procedures.</i>					
<i>Risk 10: Combined, the highest population loss for the region is persons aged 18 – 34 years and the greatest population gain is for persons over 55 years of age. Improved retention of younger populations and the strategies to attract this segment of the population back to the Region are likely to be important elements of future community resilience.</i>					
<i>Risk 11: Some segments of the population may require targeted assistance during adverse events.</i>					
<i>Risk 12: Yorke Peninsula Council and Barunga West Council may need to consider strategies for economic diversification in conjunction with retention strategies for younger populations.</i>					
<p>Summary</p> <p>Low occupancy rates for private dwellings and the threat of inundation on coastal communities are both addressed through Council planning and procedures. Fire prevention officers in Council and at a regional officer level follow procedures to limit fire fuel loading on private properties. The Yorke Peninsula Council has a comprehensive set of seawater studies that investigate potential impacts of sea level rise and inundation on coastal settlements and the adaptation options. Information and alerts are available via social media, online and publications.</p> <p>At a State level, in conjunction with federal government, the COAG is preparing a population framework to stimulate sustainable growth of regional township populations.</p> <p>The RDA takes a stronger leadership role in population strategies at a regional level including education proposals (regional universities) and education incentives (rebates) where younger populations choose to remotely study in regional communities or return with qualifications from Adelaide Universities and vocational centres. The RDA has strong links with industry and it undertakes labour/skills audits to assist industry gain access to relevant skill sets. It is able to use its strong industry relationships to advocate and operate with all levels of government to meet employment demands. This includes working on a workforce strategy for the region with Skilling SA and a tailor made 'Job Match' program designed to support local employers facing staffing shortages due to COVID-19.</p> <p>Councils acknowledge the ageing population but there is limited evidence of strategies or proposals in Council planning to address the outward migration of younger people. This may be most appropriately dealt with by the RDA or in conjunction with the RDA at a sub regional level.</p> <p>Employment diversity is obtained within the RDA Regional Road Map 2018-2028. It provides a focus on workforce development including youth employment programs and career pathways, education incentives and attraction/support for employment diversity to cater for the needs of a more diverse workforce. In general the State is looking at existing strengths and growth sectors for investment as a basis for diversifying the State's employment and economy but it is not translated into local outcomes for the region at this stage.</p> <p><i>Recommendation 5: There is potential for the Councils to work at a sub regional level with the RDA to develop more tangible economic strategies targeting population migration, employment and economic diversity and housing choice.</i></p>					



### Conclusion

Adverse events for the Region are identified as:

- Rural Fire
- Extreme Heat
- Extreme Storm
- Flood
- Animal and Plant Disease
- Coastal Hazards (Extreme Storm, Flood and Inundation)
- Earthquake
- Drought

Overall the region is well organised and prepared showing evidence or demonstrating:

- Ability to plan for and capacity to respond to adverse events in coordination with hazard leaders and the region and showing systems for effective communication to hazard stakeholders;
- Community resiliences and economic diversity that includes good distribution of social and essential infrastructure and diverse industries of employment; and
- Healthy natural systems that are contributing to biodiversity, tourism and agriculture and fishing industries.

Twelve risks were identified when assessing the Region's coordination and communication, natural resources, community resilience and economic diversification. Five key recommendations for further consideration by the Councils of the Region include:

#### [Recommendation 1](#)

Councils could complete the Drought Focused LGA/PIRSA Adverse Event Management Plan to enhance its existing planning and management of adverse natural events.

#### [Recommendation 2](#)

Councils can look at the planning, policy, coordination and communication requirements for managing region wide drought impacts as a component of undertaking the LGA/PIRSA Adverse Event Management Plan.

#### [Recommendation 3](#)

There is scope for Council to better consider climate resilience as part of asset lifecycle planning and funding within infrastructure asset management plans and where specifying and budgeting for contract construction works.

#### [Recommendation 4](#)

The risk of the ageing population, lone person households and the potentially limited evacuation routes on the peninsula could be more clearly translated and addressed in emergency planning.

#### [Recommendation 5](#)

There is potential for the Councils to work at a sub regional level with the RDA to develop more tangible economic strategies targeting population migration, employment and economic diversity and housing choice.





