# NEW HIGH SCHOOL FOR MEDOWIE FLOOD EMERGENCY RESPONSE PLAN





Prepared for: SINSW By: **en**struct group pty ltd February 2025

# NEW HIGH SCHOOL FOR MEDOWIE FLOOD EMERGENCY RESPONSE PLAN

# **ISSUE AUTHORISATION**

PROJECT: New High School for Medowie Project No: 140220

Rev	Date	Purpose of Issue / Nature of Revision	Prepared by	Reviewed by	Issue Authorise by
А	29/11/24	DRAFT issue for REF	Tim Henderson		
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С	5/02/2025	Issue for REF	Tim Henderson	Phillip Lambley	Phillip Lambley

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# **Executive Summary**

**en**struct Group have been engaged by School Infrastructure NSW (SINSW) to provide a Flood Emergency Response Plan (FERP) for the development of the New High School for Medowie at 6 Abundance Street, Medowie, NSW.

The FERP aims to appropriately recommend procedures and actions for on-site personnel to maximise their safety and reduce the risk of death and injury due to flooding and flood water. The FERP aims to raise awareness of the risk of flooding by outlining flood warnings, safe evacuation routes, designated safe assembly areas, and evacuation management plans.

The FERP is based upon the based on the key principles of emergency management as set out in the Support for Emergency Management Planning (NSW Government, 2023).

Furthermore, the FERP discusses the flooding conditions in the vicinity of the site, proposed methods of detecting flooding, proposed routes for refuge, and details of management of all personnel on site during a flooding event.

Flood threat levels are to be informed through flood bulletins and weather warnings. This communication is to be further broadcasted to students, parents and the wider school community through social media and other communication channels.

Based on a Floodplain Risk Management Study and Plan (FRMSP) by WMA Water for Port Stephens Council, and a Flood Impact Risk Assessment (FIRA) by enstruct for the proposed activity, site evacuation is to the west only, with safe H1 routes to exit the site, given that the depth and/or velocity permits to do so. Prior to this, it is recommended that the school site is closed down when extreme weather events are forecast. The management strategy can be summarised as:

- Close the site where there is sufficient flood warning or where there is extreme weather conditions forecast by the BOM
- Evacuate the site where there is sufficient warning and the site is occupied
- Failing the above measure, shelter in place until the storm subsides, with all the buildings located above the PMF level.

Based on the FIRA, it is noted that a portions of the site is subject to flooding during a PMF. Finished floor levels have all been located above the predicted PMF levels. As a result, the saftest option for site occupants if the site has not already been closed and/or evacuated, is to shelter in place for a short period of time until flood waters recede. Consequently, this flood emergency management plan is recommended to be prepared, reviewed, updated and implemented in perpetuity to provide adequate access to emergency services and procedures where extreme weather is forecast, and in the event of flood events.



# Contents

I.	Definitions
II.	Abbreviations5
1	Introduction6
	1.1 Site Description
	1.2 Key Principles of Emergency Management (EM)6
2	Project Description
	2.1 Key Access point
	2.2 Key Flood Behaviour
	2.2.1 Existing Flood Behaviour8
3	Flood and Evacuation Warnings 11
4	Flood Response Preparation12
4	Flood Response Preparation       12         4.1 Flood Inundation Time       12
4	Flood Response Preparation124.1Flood Inundation Time124.2Evacuation Drills12
4	Flood Response Preparation       12         4.1 Flood Inundation Time       12         4.2 Evacuation Drills       12         Flood Response Personnel         13
4	Flood Response Preparation       12         4.1 Flood Inundation Time       12         4.2 Evacuation Drills       12         Flood Response Personnel       13         5.1 People with Disability and Sensory Considerations       13
4 5 6	Flood Response Preparation124.1 Flood Inundation Time124.2 Evacuation Drills12Flood Response Personnel135.1 People with Disability and Sensory Considerations1313Emergency Contact
4 5 6 7	Flood Response Preparation124.1 Flood Inundation Time124.2 Evacuation Drills12Flood Response Personnel135.1 People with Disability and Sensory Considerations13Emergency Contact13Assembly Point (AP) and Evacuation Routes13
4 5 6 7 8	Flood Response Preparation       12         4.1 Flood Inundation Time       12         4.2 Evacuation Drills       12         Flood Response Personnel       13         5.1 People with Disability and Sensory Considerations       13         Emergency Contact       13         Assembly Point (AP) and Evacuation Routes       13         Flood Response Actions       14
4 5 7 8	Flood Response Preparation       12         4.1 Flood Inundation Time       12         4.2 Evacuation Drills       12         Flood Response Personnel       13         5.1 People with Disability and Sensory Considerations       13         Emergency Contact       13         Assembly Point (AP) and Evacuation Routes       13         Flood Response Actions       14         8.1 Close the school site       14
4 5 6 7 8	Flood Response Preparation       12         4.1 Flood Inundation Time       12         4.2 Evacuation Drills       12         Flood Response Personnel       13         5.1 People with Disability and Sensory Considerations       13         Emergency Contact       13         Assembly Point (AP) and Evacuation Routes       13         Flood Response Actions       14         8.1 Close the school site       14         8.2 During School Hours and After hours       14

9	Revision of Flood Emergency Response Plan	.15
10	SES Correspondence	15
10		. 10
11		.15
	DENDIX A. Dert Cterkere, Leest Emergeney Menegement Dier (EMDI AN) 0000	40

APPENDIX A: Port Stephens Local Emergency Management Plan (EMPLAN) 2022......16

#### **Definitions** Ι.

For the purpose of this Plan, the definitions below apply:

## Assembly area(s)

The designated place or places where people assemble during the course of an evacuation.

### Emergency

An event that arises internally, or from external sources, which may adversely affect the occupants or visitors in a facility, and which requires an immediate response.

### **Emergency plan**

The written documentation of the emergency arrangements for a facility, generally made during the planning process. It consists of the preparedness, prevention and response activities and includes the agreed emergency roles, responsibilities, strategies, systems and arrangements.

### **Emergency Planning Committee (EPC)**

Elected persons from the school community who are responsible for the documentation and maintenance of the flood emergency response plan and strategy at the New High school for Medowie.

## **Emergency Control Organiser (ECO)**

A person or persons appointed by the emergency planning committee to direct and control the implementation of the facility's emergency response procedures.

### Evacuation

The orderly movement of people from a place of danger.

### Refuge

An area that is specifically designed to protect people from flood and provides direct access to an exit.

#### Notes:

- 1. An area of refuge is intended to facilitate a safe delay in egress from the floor or area, thus constituting a space for people to await assistance for their evacuation.
- 2. Refuges are normally nominated by the relevant warden.

## Warden intercommunication point (WIP)

The location on a floor or evacuation zone that includes a handset provided through which instructions can be received from the intercommunication panel via the emergency intercom system.

#### Abbreviations *II.*

The following abbreviations are used in this Emergency Plan document:

AHD	Australian Height Datum
AEP	Annual Exceedance Probability
АР	Assembly Point
ARI	Average Recurrence Interval
DDA	Disability Discrimination Act
ECO	Emergency Control Organizati
EPC	Emergency Planning Committe
FERP	Flood Emergency Response P
FERP	Flood Emergency Response P
FFL	Finished Floor Level
PMF	Probable Maximum Flood
SES	State Emergency Service
WIP	Warden Intercommunication P

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# 1 Introduction

This Flood Emergency Response Plan (FERP) has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

The activity will be carried out at 6 Abundance Street, Medowie (the site). The purpose of this report is to establish a flood emergency preparations and procedures for the site.

### 1.1 Site Description

The site has a street address of 6 Abundance Road, Medowie. It is 6.51ha in area, and comprises one allotment, legally described as Lot 3 in DP788451.

A large proportion of the site is currently unused and vacant. A small shed structure and caravan are located adjacent to the northern boundary. A cluster of buildings including a single storey dwelling, an outhouse/shed structure and temporary greenhouse are located within the south eastern corner.

The site contains a largely vegetated area to the south west corner. The site is relatively flat with a gradual fall from west to east toward Abundance Road.

The site has a primary frontage to Abundance Road to the east and Ferodale Road to the north. Abundance Road and Ferodale Road are both classified Local Roads. Medowie Road, approximately 1km east of the site, is a classified Regional Road.

The area surrounding the site mostly consists of industrial, rural residential, educational, and agricultural lands. Adjacent to the north western boundary is a Shell petrol station and mechanic garage. Adjacent to the north eastern boundary is a medical health clinic. Across Abundance Road along the eastern boundary are a number of warehouse and light industrial developments. Directly north of the site across Ferodale Road are large lots used for agricultural purposes. Medowie Public School is located on Ferodale Road, to the north west of the site, opposite the Shell petrol station.



Figure 1 Site aerial photo (Nearmap)

# 1.2 Key Principles of Emergency Management (EM)

It is NSW SES's primary strategy to evacuate out of a floodplain to remove the community from the hazard to an area of safety with available resources. When this cannot be achieved, a set of principles have been developed to assist in EM. These principles are aimed at assisting councils when setting strategic directions for communities through recommendations under the Flood Risk Management (FRM) with technical assistance from NSW SES and strategically considering redevelopment in existing evacuation constrained areas. The key principles of EM are noted below alongside how they are used in the FERP:

# Principal 1 - Any proposed EM strategy should be compatible with any existing community EM Strategy

The FERP should be read in conjunction with the Port Stephens Council (PSC) requirements including the Port Stephens Local Emergency Management Plan (2022) which is attached as an appendix to this FERP, Medowie Drainage and Flood Study (2012), alongside the comprehensive Floodplain Risk Management Plan (2016).

This is to ensure that plans, maps and the FERP strategy proposed for the school is compatible with the evacuation strategies identified in existing PSC floodplain management plans or by NSW SES.

 Principle 2 - Decisions should be informed by understanding the full range of flood EM risks to the community

This FERP is based on the flood study stated in enstruct's Flood Impact and Risk Assessment (FIRA) dated November 2024, and the Medowie Floodplain Risk Management Study and Plan (FRMSP) dated April 2016.

 Principle 3 - Development of the floodplain does not impact on the ability of the existing community to safely and effectively respond to a flood

This FERP is based on enstruct's FIRA dated November 2024 where this development demonstrates a low existing flood risk and only minor local impacts on flooding.

 Principle 4 - Decisions on redevelopment within the floodplain are supported by an EM strategy that does not increase risk to life from flooding

Section 7 of the FERP demonstrates that in the event of flooding there are alternative access points where the students and staff can evacuate the site to where there are adequate services to sustain the school community.

Principle 5 - Risks faced by the itinerant population need to be managed

As the school has a variety of people visiting the school daily, the FERP is written with these types of people in mind so that in the event of flooding, they can move to an assembly point and evacuate if needed in an orderly fashion.

### Principle 6 - Recognise the need for effective flood warning and associated limitations

The steps and procedures set out in this FERP provides an effective flood warning strategy so as to give the school community the opportunity to respond to a flood threat in an appropriate and timely manner.

# Principle 7 - Ongoing community awareness of flooding is critical to assist effective emergency response

Section 9 explains that the FERP should be reviewed regularly and updated as required. The FERP has been prepared in conjunction with the SES, so that any changes to the local flood strategy is included in the FERP.



7

# 2 **Project Description**

The proposed activity involves the construction of school facilities on the site for the purpose of the New High School for Medowie. The site contains a densely vegetated area to the southwest corner which is identified as land with high biodiversity values corresponding to the areas of remnant native vegetation (PCT 3995 – Hunter Coast Paperbark-Swamp Mahogany Forest). The existing dwelling house and other structures on the site will be demolished as part of the works. No other works are proposed within this area.

The proposed new school will accommodate 640 students in 29 permanent teaching spaces including 3 support teaching spaces across 3-storeys of buildings on the site. The proposed activity be delivered across 1 stage, and will consist of the following:

29 permanent teaching spaces including 3 support teaching spaces, to accommodate 640 students, and school hall to accommodate 1,000 students. Approximately 10,500 sqm of GFA is proposed.

- Main vehicular ingress and egress to Ferodale Road to the north, with a new pedestrian and vehicle crossing proposed.
- Main pedestrian access to Abundance Road.
- Kiss and ride, and bus drop and pick up areas to Abundance Road (6 x parallel spaces).
- New pedestrian wombat crossing to Abundance Road
- Approximately 55 x car parking spaces and 3 x accessible car parking spaces.
- Approximately 70 x bicycle parking spaces.
- Block A (Admin) consisting of administration and learning spaces.
- Block B (Foodtech/Workshop) consisting of food technology rooms and workshops.
- Block C (Hall) consisting of school hall to accommodate 1,000 students.
- Central quad, 1 playing field, and 1 sports courtyard.

The proposed activity will include the following spaces; general learning spaces, General support learning spaces, administrative services, staff areas, gym and canteen, library areas for science, wood and metal, food and textiles, health PE, performing arts, additional learning spaces, student amenities, storage, movement (stairs and covered walkways).



#### Figure 2 Site Plan (NBRS)

## 2.1 Key Access point

Key access points to the site are the entry to the car park on Ferodale Road, and the main entrance on Abundance Road. Ferodale Road provides access to vehicles, while the Abundance Road gate provides access for pedestrians, with bus stop and kiss and ride facilities on Abundance Road.

# 2.2 Key Flood Behaviour

# 2.2.1 Existing Flood Behaviour

The current flood behaviour on the school site and surrounding area is based on the FIRA prepared by enstruct in January 2025, and the Medowie Floodplain Risk Management Study and Plan prepared in April 2016 by WMA Water for Port Stephens Council:







Figure 4 PMF flood extents (WMA Water FRMSP)







Figure 5

1% AEP Flood Hazard (proposed conditions). Refer to the following figure for colour legend.





Figure 7 Flood hazard categories

Ferodale Road is the main link from the subject site to Medowie Town Centre and Medowie Road. During a 1% AEP flood event, Ferodale Road will be flood affected at Campvale Drain (Brad's Bridge), cutting off this access route. Alternative access and egress is available to the west via Ferodale Road, Fairlands Road, and on to Grahamstown Road, ultimately linking to the Pacific Highway at Raymond Terrace to the west. Refer to Figure 8

Fairlands road may be subject to overland flow with up to 100mm depth during a 1% AEP event and 250mm depth during a PMF. This overland flow from a catchment in the order of 15 ha, so is likely subside shortly after a storm peak.

This access route is flood affected and considered unsafe for small vehicles during the 1 in 500 AEP flood event, and unsafe for all vehicles during the peak of a PMF event. While the site should be closed down if extreme weather is forecast, any persons at the site during a flood event should shelter in place until flood waters recede.

Regarding Hazard Classification, the evacuation routes from the site to the west is noted as **H1**, generally safe for people, vehicles and buildings for storms up to the 1 in 100-year storm event.

Figure 6PMF flood hazard (proposed conditions)



Figure 8 PMF flood extents and potential access/egress route

# 3 Flood and Evacuation Warnings

The Campvale Drain catchment is a relatively small catchment area, and therefore there can be little to no warning for rising flood waters. Any early warning will be based on weather forecasts and approaching storm warnings.

There are a number of official flood warnings issued by the Bureau of Meteorology, State Emergency Service (SES) and NSW Police which can assist in the preparation of a potential flood. The warning types are:

### Severe Weather Warnings (Bureau of Meteorology):

Severe Weather Warnings are provided for potentially hazardous or dangerous weather that is not directly related to severe thunderstorms, tropical cyclones or bushfires. They are issued for sustained winds of gale force; wind gusts of 90km/h or more; very heavy rain that may lead to flash flooding and abnormally high tides.

### Severe Thunderstorm Warnings (Bureau of Meteorology):

A Severe Thunderstorm Warning is issued if the severe phenomena are directly caused by the thunderstorm and include wind gusts of 90km/h or more; gale force winds; tornados; blizzards\ heavy rainfall that is conducive to flash flooding; hail with a diameter of at least 2cm; abnormally high tides and unusually large surf waves expected to cause dangerous conditions on the coast.

## Flood Watch (Bureau of Meteorology):

A Flood Watch is issued by the Bureau of Meteorology if flood producing rain is expected to happen in the near future and flooding is expected to be above Minor level. A Flood Watch covers a river basin or catchment. The general weather forecasts can also refer to flood producing rain. You should be prepared to act should flooding occur.

### Flood Warning (Bureau of Meteorology):

A Flood Warning is issued by the Bureau of Meteorology when flooding is expected to occur or is happening. Flood Warnings provide a predicted flood level and time at which a river will reach that level. Flood Warnings are issued in relation to flood gauges which are situated at a certain point on a river. Flood Warnings may contain observed, peak or predicted river heights.

### **NSW SES Flood Warnings (SES):**

Flood warnings are issued via the NSW SES website, NSW SES social media channels and by listening to local ABC radio stations. These warnings include likely consequences, and what actions are required to protect yourself and your property.

Alongside this, the NSW SES issues warnings in line with the Australian Warning System (AWS), to provide an additional channel for communities to access important warning information.

## **Evacuation Warning (SES):**

When flooding is likely to cut evacuation routes or inundate property, the NSW SES issues warnings in line with the Australian Warning System (AWS). The AWS is a nationally consistent, three-tiered approach designed to make warnings clearer and lead people to take action ahead of severe weather events. The warning system comprises warning levels, action statements, hazard icons, colours and shapes. Being prepared will allow you to respond quickly if a warning is issued.



It is important to inform occupants on the site of current advice and warnings. This can be done via the PA system. Typically, visitors and any itinerant population may seek advice from the reception. For this reason, it is imperative that reception staff are kept informed of any evolving flood situations.

### Monitor the flood situation:

In addition to receiving an official warning, monitoring the situation before flooding begins to impact the site is important. Monitoring the situation can be undertaken by personally witnessing the height and rate at which floodwaters are rising; maintaining contact with other people in the building and local and government radio stations to receive and share updates on the flood situation.

### The likelihood of flash flooding:

Severe Weather Warnings and Severe Thunderstorm Warnings issued by the Bureau of Meteorology warn of the possibility of flash flooding.

When flash flooding is likely, leaving low-lying businesses (evacuation) well before flash flooding begins is the best action to take, but only if it is safe to do so. If you are trapped by rising floodwater, seek refuge in the nearest building within the school site. Stay there and call '000' (triple zero) if you need rescue.

All warnings will be issued through the Bureau of Meteorology website, television and local radio stations for weather warnings such as 1233 ABC NEWCASTLE 1233 AM and 95.9 FM, ABC NEWS RADIO 1458 AM and 95.1 FM, RADIO NATIONAL 1512 AM and 98.3 FM, SBS RADIO 1412 AM, TRIPLE J 102.1 FM, 2HD 1142 AM, NEWY 87.8 FM 87.8 FM, RAW FM 88.0 FM, TRIPLE M 102.9 FM, NEW FM 105.3 FM, HIT FM 106.9 FM.

#### **Flood Response Preparation** 4

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the school for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden during emergency events, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

The Emergency Planning Committee is also to organise evacuation drills and flood emergency kits to prepare all site personnel for flood risks.

### 4.1 Flood Inundation Time

Peak flood levels were observed during the 30-minute storm event to several hours for the 1% AEP and the PMF storm event. The high intensity short duration flood behaviour is considered flash flooding and there would be insufficient or no warning following the start of the storm event. This is considered short duration 'flash flooding' and the warning provided would be for immediate safety precautions such as evacuation off the open playing fields, emergency evacuation out of areas where significant water will be stored, temporary refuge in buildings on site, and accounting for people on site.

### 4.2 Evacuation Drills

Evacuation drills run through the flood management procedure onsite and are designed to increase flood awareness for all students, staff, and visitors of the campus. These drills are to be undertaken annually to familiarise all personnel of the procedures when responding to a flood event.

#### Flood Emergency Kit

Potential items for a flood emergency kit are outlined at www.floodsafe.com.au and reproduced below:

- A copy of the school Emergency Management Plan;
- A torch with spare batteries;
- A first aid kit;
- Waterproof bag for valuables;
- A copy of emergency numbers; and

The kit should be kept in each building throughout the school for efficient deployment in the event of an emergency. The contents of the kit and management during a flood event will be the responsibility of the Chief Warden. This storage area should also be used for protecting hazardous materials and valuable goods from flood water.

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Battery operated radio with AM and FM frequency access (with spare batteries).

#### Flood Response Personnel 5

Summarised below are the personnel involved in the management of the flood response at the site, and corresponding responsibilities. Personnel information to be provided by SINSW.

#### **Table 2: Personnel and Responsibilities**

Emergency Response Role	Responsibility	Responsible Person's name	Phone Number	Responsibility
Emergency Control Organisation	WHS Team			Coordinate flood evacuation drills
Chief Warden	Principal			<ul> <li>Monitor weather daily for upcoming extreme rainfall events;</li> <li>Decide when evacuation is required;</li> <li>Liaise and communicate with SES or Emergency Services personnel if they attend site; and</li> <li>Manage the evacuation process in consultation with SES or Emergency Services.</li> </ul>
Deputy Chief Warden	Supports Chief Warden			

## 5.1 People with Disability and Sensory Considerations

Flood evacuation procedures/protocols are to consider the requirements of those with disability and sensory considerations. A disability and sensory conditions register is to be maintained by the high school for these purposes.

#### **Emergency Contact** 6

The Chief Warden is to be contactable via the WIP phone at all times to ensure they are ready to assist any students or staff.

- For emergency assistance during flood events, please call the SES on 132 500.
- If you are in a life-threatening situation please call Police, Fire or Ambulance on "000" (triple • zero).
- Local Raymond Terrace Police Station on 02 4983 7599.

# 7 Assembly Point (AP) and Evacuation Routes

If the SES flood warnings are issued with sufficient time prior to the flood emergency overnight, it is recommended that the school driveway at Ferodale Road remains closed to prevent staff, students, deliveries, and visitors from entering the carpark. If the flood warning is issued during school operation hours, the driveway is to be closed to prevent vehicles leaving the site, students are to assemble with a teacher to register that they are present prior to organising to leave the site into suitable care, or to travel home. Students are to be advised that the front entry on Abundence Road is not to be used. This warning buffer allows sufficient time for site occupants to leave the site through provided evacuation routes before they are obstructed as the water level rises in large storm events. If occupants delay leaving the site, they may become isolated by the flood water at the western boundary which may prevent safe exit from the site until the storm event subsides.

Monitor radio and other communications taking particular notice of:

- Fairlands Road: Flood maps indicate this evacuation route may be impacted by flooding. Evacuation should not be attempted if there is notice of flooding here.
- roads are open.

If there is no warning due to flash flooding, during school hours, then the driveway is to be closed to prevent vehicles leaving the site, students are to assemble with a teacher to register that they are present and are to remain in the classroom until the storm event subsides. Teachers should inform the Chief Warden all are present and accounted for or otherwise.

For events outside of school hours, where the school premises are used by external parties including local community, election polling centres, recreational activities etc., all parties must be familiar with this FERP and be provided with necessary access to evacuation assembly points and routes.

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Grahamstown Road and Richardson Road: These roads are on the evacuation route between the subject site and Raymond Terrace. Evacuation should not be attempted if unless these

#### **Flood Response Actions** 8

8.1 Close the school site



When a Flood Advice has been issued, prepare to close the school. To minimise risk to the community, staff and students should be advised to stay at home.

- Inform school students, parents, and staff via usual school communications channels (email, sms, school app) that the campus will be closed.
- Update the New High School for Medowie Facebook/Social Media pages and send an email/text message to all parents to outline campus closure and that evacuation has been required
- Close and lock the gates. Provide signage indicating that the school is closed.

## 8.2 During School Hours and After hours



Once a Flood Watch and Act for the Medowie area or Port Stephens Council LGA has been issued:

- Sound evacuation tone •
- Chief Flood Warden to be on hand if staff call or require guidance
- Chief Flood Warden to make contact with Emergency Services to notify if immediate assistance is required, or all safe and accounted for
- Leave signage at site entrance that evacuation has occurred

- has been required
- school-updates/id1494658146)
- Road
- for the PMF event.
- supervision of a teacher when transport arrives.
- visitors, providing updates on the situation
- Site to be shut down, where possible of all, but essential power; and
- Staff to leave the site following student evacuation.

# 8.3 Shelter in Place



If an Emergency Warning has been issued, it may no longer be safe to evacuate the site. In this instance, any persons remaining on site should shelter in place:

- Sound evacuation tone
- Chief Flood Warden to be on hand if staff call or require guidance
- assistance is required, or all safe and accounted for
- for the PMF event.

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 Update the New High School for Medowie Facebook/Social Media pages and send an email/text message to all parents to outline campus closure and that evacuation

Instruct parents to follow announcements released on the NSW Government School Updates app (available to download here: https://apps.apple.com/au/app/nsw-

 Staff to supervise all students in their care and take a roll of attendance before allowing them to leave the school campus for storms causing flooding on Ferodale

Staff to assist students in their care to organise a suitable relocation to a safe refuge

• Students to move towards the site entrance in an orderly fashion under the

Chief Flood Warden to maintain regular communication with students, staff and

Chief Flood Warden to make contact with Emergency Services to notify if immediate

Staff to assist students in their care to organise a suitable relocation to a safe refuge

#### **Revision of Flood Emergency Response Plan** 9

This plan should be reviewed if the Port Stephens Council requirements or Campvale Drain Flood Study, Plans and Maps are revised, and if the street drainage surrounding the site is upgraded.

The Emergency Planning Committee shall be responsible for ensuring the Flood Emergency Response Plan is reviewed annually and updated as required. As part of the review, the Emergency Planning Committee shall contact Council annually to confirm if any new street drainage upgrades are planned or have been constructed.

# **10 SES Correspondence**

In preparing this FERP, the SES has been consulted provided the following feedback, which has been integrated into this document.

SES comments	Response
Recommend updating the Flood Emergency Response Plan to:	
Include clear flood emergency response responsibilities and actions, in a sequential order to include associated trigger points and timeframes;	Section 5 of this FERP outlines key personnel and responsibilities. Section 8 outlines emergency response actions with trigger points based on the AWS.
Remove all references to Flood Bulletins as these warning products and terminology are no longer in use. The NSW SES utilises the Australian Warning System (AWS) which is a nationally consistent, three-tiered approach to issue clear warnings and lead people to take action ahead of severe weather events.	Section 3 of this document references the AWS, with references to Flood Bulletins removed.
Note that warnings to the community in a flash flood environment are often limited to Severe Weather/Thunderstorm Warnings or Flood Watches for the general area, often with no specific forecasts or advice available on the local impacts of flash flooding. Flash flooding at this location does not currently have water level gauges that can provide information to the public about the potential scale of the flood's impacts.	Section 8 of this FERP has been prepared on the basis of warnings being issued for the general area. Section 7 advises to monitor the radio and other communications channels for specific information impacting potential evacuation routes.

# 11 Conclusion

It is important to monitor all flood warning websites such as Bureau of Meteorology and SES for campus occupants to have sufficient time to close the site and/or leave the site in a safe manner through the provided evacuation routes before they are obstructed as the water level rises in large storm events.

The management strategy can be summarised as:

- weather conditions forecast by the BOM
- Evacuate the site where there is sufficient warning and the site is occupied
- buildings located above the PMF level.

If the site were occupied up to a 1% AEP storm event, evacuation routes from the site are generally safe for people and vehicles, following evacuation procedures outlined in this FERP.

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the building for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

This FERP is to be reviewed if PSC revises flood planning requirements and flood studies, and if the street drainage surrounding the site is upgraded.

Further, this FERP is reviewed regularly (on a yearly basis) and updated if the school communication and parent contact methods change.

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Close the site where there is sufficient flood warning or where there is extreme

Failing the above measure, shelter in place until the storm subsides, with all the

# **APPENDIX A: Port Stephens Local Emergency Management Plan (EMPLAN) 2022**





# Port Stephens Local Emergency Management Plan (EMPLAN) 2022



# Part 1 – Administration

# Authority

The Ideal Local Emergency Management Plan (EMPLAN) has been prepared by the Ideal Local Emergency Management Committee in compliance with the State Emergency & Rescue Management Act 1989.

APPROVED ......

Chair

Port Stephens Local Emergency Management Committee

Dated: 27 OCTOBER 2022

ENDORSED

Chair

**Regional Emergency Management Committee** Peter McKenna APM

Assistant Commissioner

Dated: 08/11/2022

# Contents

Part 1 – Administration	3
Authority	
Contents	
Purpose	
Objectives	
Scope	
Principles	7
Test and Review Process	7
List of Abbreviations	
Part 2 – Community Context	
Annexure A – Community Profile	10
General	10
Climate	
Landform and Topography	13
Land Use	13
Flood Prone Land	14
Population and People	17
Transport Routes and Facilities	23
Economy and Industry	
COVID 19 impact	
Annexure B – Hazards and Risks Summary	35
Annexure C – Local Sub Plans, Supporting Plans and	Policies
Part 3 – Restricted Operational Information	Error! Bookmark not defined.
Annexure D – Community Assets	Error! Bookmark not defined.
Key Resources and Locations	Error! Bookmark not defined.
Key Infrastructure	Error! Bookmark not defined.
Annexure E – Evacuation Centres List	Error! Bookmark not defined.
Tier 1 - Evacuation Centres	Error! Bookmark not defined.
Tier 2 - Evacuation Centres	Error! Bookmark not defined.
Tier 3 - Evacuation Centres	Error! Bookmark not defined.
Tier 4 – Neighbour Safer Places	Error! Bookmark not defined.

Annexure F – Vulnerable Facilities List	42
Annexure G – Consequence Management Guides	43
Document Control	44

# Purpose

Details arrangements for, prevention of, preparation for, response to and recovery from emergencies within the Local Government Area(s) covered by this plan.

It encompasses arrangements for:

- emergencies controlled by combat agencies;
- emergencies controlled by combat agencies and supported by the Local Emergency Operations Controller (LEOCON);
- emergency operations for which there is no combat agency; and
- circumstances where a combat agency has passed control to the LEOCON.

# Objectives

The objectives of this plan are to:

- define participating organisation and Functional Area roles and responsibilities in preparation for, response to and recovery from emergencies;
- set out the control, co-ordination and liaison arrangements at the Local level;
- detail activation and alerting arrangements for involved agencies; and
- detail arrangements for the acquisition and co-ordination of resources.

# Scope

The plan describes the arrangements at Local level to prevent, prepare for, respond to, recover from emergencies, and provide policy direction for the preparation of Sub Plans and Supporting Plans:

- Arrangements detailed in this plan are based on the assumption that the resources upon which the plan relies are available when required; and
- The effectiveness of arrangements detailed in this plan are dependent upon all involved agencies preparing, testing and maintaining appropriate internal instructions, and/or standing operating procedures.

# Principles

The following principles are applied in this plan:

- a) The Emergency Risk Management (ERM) process is to be used as the basis for emergency planning in New South Wales. This methodical approach to the planning process is to be applied by Emergency Management Committees at all levels.
- b) Responsibility for preparation, response and recovery rests initially at Local level. If Local agencies and available resources are not sufficient they are augmented by those at Regional level.
- c) Control of emergency response and recovery operations is conducted at the lowest effective level.
- d) Agencies may deploy their own resources from their own service from outside the affected Local area or Region if they are needed.
- e) The Local Emergency Operations Controller (LEOCON) is responsible, when requested by a combat agency, to co-ordinate the provision of resources support. EOCONs would not normally assume control from a combat agency unless the situation can no longer be contained. Where necessary, this should only be done after consultation with the Regional Emergency Operations Controller (REOCON) and agreement of the combat agency and the appropriate level of control.
- f) Emergency preparation, response and recovery operations should be conducted with all agencies carrying out their normal functions wherever possible.
- g) Prevention measures remain the responsibility of authorities/agencies charged by statute with the responsibility.

# Test and Review Process

The Ideal Local Emergency Management Committee (LEMC) will review this Plan every three (3) years, or following any:

- activation of the Plan in response to an emergency;
- legislative changes affecting the Plan; and
- exercises conducted to test all or part of the Plan.

# List of Abbreviations

The following abbreviations have been used within this plan:

ABS	Australia Bureau of Statistics
BOM	Bureau of Meteorology
CMG	Consequence Management Guide
DISPLAN	Disaster Plan
DPI	Department of Primary Industries
DSEP	Dam Safety Emergency Plan
EMPLAN	Emergency Management Plan
ECL	East Coast Low
EM	Emergency Management
EOC	Emergency Operations Centre
ERM	Emergency Risk Management
FRNSW	Fire and Rescue New South Wales
GRP	Gross Regional Product
нν	High Voltage
JATWC	Joint Australian Tsunami Warning Centre
JATWC LEMC	Joint Australian Tsunami Warning Centre Local Emergency Management Committee
JATWC LEMC LEMO	Joint Australian Tsunami Warning Centre Local Emergency Management Committee Local Emergency Management Officer
JATWC LEMC LEMO LEOCON	Joint Australian Tsunami Warning Centre Local Emergency Management Committee Local Emergency Management Officer Local Emergency Operations Controller
JATWC LEMC LEMO LEOCON LEP	Joint Australian Tsunami Warning Centre Local Emergency Management Committee Local Emergency Management Officer Local Emergency Operations Controller Local Environmental Plan
JATWC LEMC LEMO LEOCON LEP LGA	Joint Australian Tsunami Warning Centre Local Emergency Management Committee Local Emergency Management Officer Local Emergency Operations Controller Local Environmental Plan Local Government Area
JATWC LEMC LEMO LEOCON LEP LGA LLS	Joint Australian Tsunami Warning Centre Local Emergency Management Committee Local Emergency Management Officer Local Emergency Operations Controller Local Environmental Plan Local Government Area Local Land Services
JATWC LEMC LEMO LEOCON LEP LGA LLS LNG	Joint Australian Tsunami Warning Centre Local Emergency Management Committee Local Emergency Management Officer Local Emergency Operations Controller Local Environmental Plan Local Government Area Local Land Services Liquid Natural Gas
JATWC LEMC LEMO LEOCON LEP LGA LLS LNG	Joint Australian Tsunami Warning Centre Local Emergency Management Committee Local Emergency Management Officer Local Emergency Operations Controller Local Environmental Plan Local Government Area Local Land Services Liquid Natural Gas Low Voltage

NBN National Broadband Network **NSW SES** New South Wales State Emergency Service **NSW RFS** New South Wales Rural Fire Service RAAF Royal Australian Air Force REOCON **Regional Emergency Operations Controller** RFC **Region Forecast Centre** SEOCON State Emergency Operations Controller SERCON State Emergency Recovery Controller State Emergency and Rescue Management Act 1989 SERM Act **USAR** Urban Search and Rescue

# Part 2 – Community Context

# Annexure A – Community Profile

# General

Port Stephens is a coastal Local Government Area (LGA) in the Hunter Region of New South Wales. Located just north of Newcastle, Port Stephens is approximately 200 kilometres north of Sydney. Dungog Shire and the Mid Coast Council area in the north, the City of Newcastle across the Hunter River in the south and Maitland City in the west, bound the Port Stephens LGA. Port Stephens with a land area of almost 86,000 hectares is approximately 55 kilometres from east to west and 30 kilometres from north to south.



# Map 1.0 Port Stephens LGA and surrounding LGA's

To the North West lies the harbour of Port Stephens, with an area of approximately 134 square kilometres it's larger than Sydney Harbour. It extends generally from the Hunter

River in the south, to near Clarence Town in the north, and from the Tasman Sea in the east, to just south of Paterson in the west. The area is bisected by the Pacific Highway, which runs near Raymond Terrace, the largest township in the local government area.



Map 2.0 Port Stephens LGA and the location of its settlements

The LGA contains major service centres at Raymond Terrace (regional centre), and Nelson Bay/Salamander Bay. A major industrial area is located at Tomago, which is adjacent to the Port of Newcastle, and the regional civilian airport is located at Williamtown. A large defence facility, RAAF Base Williamtown, is located adjacent to the airport.

There are a number of smaller rural communities such as Karuah, Seaham and Wallalong dispersed throughout other less populated planning districts to the north and west of Raymond Terrace and Medowie.

Port Stephens has a population of 74506 people <sup>1</sup> and supports 27,346 jobs. Its annual economic output of \$13.523 billion. Port Stephens has an ageing population with high growth rates of people aged 65 years and over. The 20-34 age group is small and decreases as people leave for higher education and employment.

<sup>&</sup>lt;sup>1</sup> - REMPLAN ABS 2020 Estimated Residential Population

# Climate

Port Stephens enjoys a temperate year round climate without the high humidity and seasonal temperature extremes.

The Port Stephens area has moderate summer temperatures. The average summer high temperature for Port Stephens Area is approximately 26 °C. The average summer low temperature is approximately 17 °C.

The Port Stephens area has mild winter temperatures. The average winter high temperature for Port Stephens area is approximately 18 °C. The average winter low temperature is approximately 8 °C.

Rainfall is evenly distributed throughout the year with around 11 days per month of rainfall. The annual average is 1,347mm of rain.



# Port Stephens Annual Climate

**Graph 1.0 Port Stephens Annual Climate** 

# Landform and Topography

The Port Stephens LGA enjoys substantial biodiversity due to the variety of ecosystems it contains. These include open forest, rainforest, riparian forest, coastal swamp forests, woodland, and heath and sedge land.

Port Stephens has a unique coastal zone from its sandy beaches and rocky headlands to its mangroves, salt marshes and wetlands. It stretches from Fern Bay in the south to Yaccaba Headland in the north, including the estuary of Port Stephens. The coastal zone covers areas of both Port Stephens Council and Mid Coast Council.

A number of vegetation communities in Port Stephens are classified as nationally, state or regionally significant with around 32,156 hectares (37%) of protected land in the LGA that support biodiversity conservation.

# Land Use

The Port Stephens Local Environmental Plan 2013 provides a range of land use zones. RU2 - Rural Production represents (22.17%) E1 - National Parks Natural Reserves (19.6%) W2 - Recreational Waterways (13.14%) and RU1 - Primary Production (11.91%) represent two-thirds (66.82%) of land zoned in Port Stephens.



Map 3.0 Land Zoning Map for Port Stephens



Table 1.0 Land Zoning by area (Ha) of Port Stephens LGA

# Flood Prone Land

Port Stephens is a relatively flat and has low lying topography. 46% of the Local Government Area is Flood Prone Land. Arterial roads that connect Nelson Bay peninsula with Williamtown and the rest of the LGA are predominantly low lying and susceptible to flood. Port Stephens has two critical risk sections of flood on Tomaree Peninsula where Nelson Bay Road is subject to flooding and would provide no alternate route if cut off or closed.



Map 4.0 Port Stephens Flood Prone Land

# **Grahamstown Dam**

Constructed between 1955 and 1965, Grahamstown Dam is the Hunter's largest drinking water supply dam, providing 40% of water to our region and meeting up to 75 % of the daily supply requirements. The dam has a catchment area of 115km2, and a volume of approximately 182,305ML (million litres) with an average depth of 9 metres. The water surface area is 2800 hectares.

Grahamstown Dam is classified as an off-river storage facility, storing raw water that's pumped from the Williams River at Seaham Weir through the Balickera Canal, which flows into the northern end of Grahamstown Dam. On average, 50% of inflow to Grahamstown Dam is pumped from the Williams River.



# Map 5.0 Grahamstown Dam and the surrounding town centres of Raymond Terrace and Medowie

Water stored in Grahamstown Dam is accessed for supply to customers at George Schroder Pump Station. This pump station delivers water through twin parallel mains to the Grahamstown Water Treatment Plant at Tomago. All water from Grahamstown Dam is fully treated before distribution to customers.

# **Drinking Water Catchment**

The catchment is primarily located on the northern and eastern shores of the dam. To the north of the catchment, Seven Mile Creek fills the dam with run-off from small farms and other minor developments. Approximately 75 per cent of total catchment run-off comes from the northern part of the catchment.

Run-off from the east comes directly from the urban settlement of Medowie through the Campvale Swamps. Water is pumped into the dam via the Campvale Pump Station and finally spills into the Irrawang Spillway. Hunter Water works closely with landowners and residents in the Grahamstown catchment area to improve the quality of water draining into Grahamstown Dam.



# Map 6.0 Hunter Water catchment areas

Grahamstown Dam is classified as an off-river storage facility, storing raw water that is pumped from the Williams River at Seaham Weir through the Balickera Canal, raised approximately 15m at the Balickera Pump Station and then flows through the Balickera Canal and Tunnel into the northern end of Grahamstown Dam. On average, 50 per cent of inflow to Grahamstown Dam is pumped from the Williams.

Hunter Water monitors water quality in the Williams River for nutrients before transferring water to Grahamstown Dam. Like most Australian rivers, the Williams is highly influenced by climatic conditions and is consequently highly variable in flow and water quality. Flow and water quality are assessed against pumping rules to minimise the nutrient load transferred to the dam.

Seaham Weir is used to separate the downstream tidal estuarine salt water from the upstream fresh water.

Balickera Pump Station and Canal are used to transfer water from the Williams River to Grahamstown Dam. The station is designed to transfer flows from the very high flow periods that would otherwise just make their way out to sea.

# Population and People

The total population of the Port Stephens in 2020 was 74,506. The population at the ABS 2016 Census was 69,556. This represents an annualised growth rate of 1.15 percent.

Port Stephens has an aged and ageing population with 42% of the LGA 50 years and older, much higher than the 34% average for NSW. 24% of the population is aged 65 years and over compared to the state average of 16%. The single largest age cohort in Port Stephens is "65-69 years" with 5,184 people representing 7.45 percent of the population.



# Population age of Port Stephens

# Graph 2.0 Port Stephens population by age

The median age is 45 years and the overall ratio of males to females is 1 to 1.023. 6.8% of the population (4,398 people) have a profound or severe disability (NSW 5.6%).



# Population by lifestyle age

# Graph 3.0 Port Stephens Population by lifestyle age

The Port Stephens LGA has varying community demographics with a dispersed and fragmented settlement pattern. The majority (55%) of Port Stephens residents live in Raymond Terrace, Medowie and the Tomaree (Nelson Bay, Corlette and Salamander Bay) planning districts. 86% of the population of Port Stephens live in the following 10 suburbs across the LGA.

Suburb	Population	Area (ha)	Persons / ha
Raymond Terrace	12652	4077.12	3.1
Medowie	9320	4254.22	2.19
Nelson Bay	6172	1565.64	3.94
Corlette	5180	305.87	16.94
Salamander Bay	4805	856.47	5.61
Anna Bay	3721	2225.02	1.67
Tanilba Bay	3104	1303.29	2.38
Fern Bay	2660	835.32	3.18
Lemon Tree Passage	2564	297.25	8.63
Shoal Bay	1974	401.88	4.91

# Table 2.0 Port Stephens population top 10 suburbs



# Map 7.0 Port Stephens by population density

The Port Stephens population includes 3,325 Aboriginal and Torres Strait Islander people, who make up 4.8% of the population (NSW 2.9%). The Worimi people are the traditional owners of the land of Port Stephens.

83.1% of residents in Port Stephens were born in Australia where English is he language spoken (92.2% of households).



# Aboriginal and Torres Strait Islander population

# Graph 4.0 Port Stephens Indigenous and Torres Strait Islander population proportion

The largest population (1035 of 3133) of the Port Stephens Indigenous and Torres Strait Islander population reside in Raymond Terrace. Medowie, Nelson Bay, Karuah and Tanilba Bay make up the next 1012 Indigenous and Torres Strait Islander residents



Graph 5.0 Port Stephens Indigenous and Torres Strait Islander population by suburb

The dominant dwelling type in the Port Stephens LGA are separate housing at 83.83%. This is much higher than the NSW average of approximately 71%. High-density housing only represents 1.14% whereas the NSW average is 12.32%. This aligns with the population density for the LGA.

			Dwelli	ngs ty	ре					
Separate house										83.83%
Medium density	′		12.25%							
Caravan, cabin, houseboat	:	.92%								
High density	1	.41%								
Not stated	0.4	43%								
Other	0.1	L7%								
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%

## Graph 6.0 Port Stephens dwelling type

The average number of people per household is 2.5 people.



# Graph 7.0 Port Stephens demographic of families

An average number of motor vehicles per dwelling is 1.8.

Home ownership is higher than the state average (approx. 30% compared to 25% for NSW). This could be contributed to the higher population of those entering or in retirement. Homes owned with a mortgage and rented dwellings are on par with the NSW average.



### Home ownership

### Graph 8.0 Port Stephens home ownership

The total number of people in Port Stephens in the Retirement village (self-contained) dwelling in 2016 was 2,673. The majority of the are located in the Fern Bay area to the south of Port Stephens



Population in Retirement Villages by location

# Graph 9.0 Port Stephens population in retirement villages by location

This represents 3.97% of the total number of applicable people enumerated in Port Stephens Unemployment in Port Stephens is at 3.76% however, the total jobless population is 51.6% for people aged 15 and above.



# Graph 10.0 Unemployment trend for Port Stephens residents

Those 'Not in the labour force' is the most common employment status with 22,997 people represented. The unemployed and looking for part-time work cohort recorded the largest change in Port Stephens, showing a 26.5% increase from 2011.





# Graph 11.0 Port Stephens employment status of residents

# **Transport Routes and Facilities**

Port Stephens Council is located on the NSW lower North coast. The LGA is bisected and serviced by the Pacific Highway, the major interstate highway linking Sydney and Brisbane. Nelson Bay Road connects the Tomaree Peninsula with Newcastle. The main arterial roads in the area carry significant volumes of heavy vehicles carrying freight and servicing the local heavy industrial operations.

Public transport is provided by Port Stephens Coaches and Hunter Valley Buses who operate bus services in the main centres and across the LGA.

Port Stephens Ferry Service provides a ferry link between Nelson Bay and Tea Gardens.

There are no rail services within the Local Government Area.

# **Newcastle Airport**

Newcastle Airport is located in Williamtown, 15 kilometers north of Newcastle and 16 kilometers South East of Raymond Terrace, New South Wales. The airport occupies a 28 ha (69-acre) site on the southern border of RAAF Base Williamtown.

The airport runway is shared with the RAAF Base Williamtown. Even though this base is a military airfield, civilian operations are permitted. The airport is leased from the Federal Government for civilian air travel until 2045. The airport is jointly owned by Newcastle City Council and Port Stephens Council, and managed by Newcastle Airport Limited. Approximately 185 domestic flights depart from Newcastle Airport on a weekly basis. It is estimated that the Airport generates \$633.5 million to the local economy annually.



Map 7.0 map of Newcastle Airport, Williamtown

# Pacific Highway

The Pacific Highway is a 790-kilometre-long national highway and major transport route along the central east coast of Australia. It dissects the Port Stephens LGA at Hexham to the South through to Karuah in the North. The Pacific Highway North of the Hexham Bridge has and average daily traffic count in excess of 47,000 vehicles a day.



Map 8.0 map of Pacific Highway from Hexham to Karuah

The federal government has committed \$2 billion to build the M1 Pacific Motorway extension to Raymond Terrace. It includes 15 kilometers of dual carriageway around Hexham and Heatherbrae; interchanges at Black Hill, Tarro, Tomago and Raymond Terrace; and a 2.6km bridge over Woodlands Close, the Main Northern Railway, New England Highway and Hunter River.



Map 9.0 Proposed Pacific Highway bypass extension from Black Hill to past Heatherbrae

The proposal includes a 2.6 kilometer viaduct crossing the Hunter River, substantially reducing upstream flooding impacts and improving flood immunity and accessibility along the National Land Transport Network. The completed project will be built to withstand a minimum one-in-20 year flood event and provides an alternative flood emergency and evacuation route to the existing road network.



Map 10.0 Proposed Pacific Highway bypass extension from Black Hill to past Heatherbrae

The M1 Pacific Motorway extension is expected to take around four years to build and open to traffic in 2028.

# Key Bridges

Name	Crossing	Location	Owner	Significance
Pacific Highway	Hunter River	Tomago	Transport for NSW	National transport route
Tomago Bridge				Two dual lane bridges (northbound and
				southbound) of Pacific Highway
Pacific Highway	Karuah River	Tarean Road,	Transport for NSW	National transport route
Karuah Bridge		Karuah		Two dual lane bridges (northbound and
				southbound) of Pacific Highway
Fitzgerald	Williams River	Seaham Rd,	Transport for NSW	2 lane bridge east and west over the Williams
Bridge		Raymond Terrace		River
Windeyers	Windeyers Creek	Raymond Terrace	Transport for NSW	2 lane bridge east and west over the
Creek				Windeyers Creek
Pacific Highway	Grahamstown	Ferodale	Transport for NSW	National transport route
Grahamstown	Drain			Two dual lane bridges (northbound and
Drain				southbound) of Pacific Highway
Pacific Highway	Mount Hall Road	Raymond Terrace	Transport for NSW	National transport route
Mount Hall				Two dual lane bridges (northbound and
Road				southbound) of Pacific Highway
Pacific Highway	Richardson Road	Raymond Terrace	Transport for NSW	National transport route
Richardson				Two dual lane bridges (northbound and
Road				southbound) of Pacific Highway

Pacific Highway	Grahamstown	Raymond Terrace	Transport for NSW	National transport route
Grahamstown	Dam Spillway			Two dual lane bridges (northbound and
Dam Spillway				southbound) of Pacific Highway
Pacific Highway	Balikera Canal	Raymond Terrace	Transport for NSW	National transport route
Balikera Canal				Two dual lane bridges (northbound and
				southbound) of Pacific Highway
Pacific Highway	Limeburners	Karuah	Transport for NSW	National transport route
Limeburners	Creek			Two dual lane bridges (northbound and
Creek overflow				southbound) of Pacific Highway
Balikera Canal	East Seaham	Seaham	Hunter Water	Blocking access to East Seaham Road north
	Road			and south bound.
Tilligerry Creek	Nelson Bay Road	Salt Ash	Transport for NSW	Main and ONLY access road to Tomaree
				Peninsula. (Approximately 40% of the LGA
				reside). Single dual lane bridge
James Scott	East Seaham	Seaham	PSC	Connects Seaham to East Seaham Road and
Bridge	Road,			New Line Road
Tumbledown	Clarence Town	Glen Oak	PSC	Single dual lane bridge Clarence Town Road,
Creek Bridge	Road			the main access road to Clarence Town and
				Dungog.

Table 3.0 Port Stephens key bridges

# **Economy and Industry**

Port Stephens boasts both rural and coastal environments and a rapidly growing population base supporting a range of industries and businesses. Port Stephens has an annual economic output of \$11.914 billion. The total number of jobs in Port Stephens in 2016 was 27,346. Port Stephens' Gross Regional Product (GRP) is estimated at \$5.155 billion. Port Stephens represents 9.4% of Hunter Region's GRP and 0.9% of New South Wales Gross State Product (GSP).

Manufacturing, Construction and Public Administration and Safety are key economic drivers for Port Stephens and the wider Hunter Valley. The 3 sectors account for 59.3% of total economic output and 38% employment. Manufacturing alone accounts for 29.5% of total economic output and 11.8% of total employment. The total number of jobs in Port Stephens in 2016 was 27,346.



# Port Stephens Economic Output by Industry

# Graph 12.0 Port Stephens Economic Output by Industry

Williamtown RAAF Base, Tomago Aluminium, Newcastle Airport, AGL and Westrac are key employers within the LGA along with state and local government. Other major employment industries include tourism, transport and logistics, construction and retail.



# **Employment by Industry Sector**

## Graph 13.0 Port Stephens Employment by Industry Sector

Employment for Port Stephens residents with the LGA are retail trade and construction, although the highest employment is in Health Care and Social Assistance, these jobs are mostly outside of the LGA.



**Employment for Port Stephens Residents by Industry** 

# Graph 14.0 Employment for Residents by Industry

Socio-Economic Indexes for Areas (SEIFA) is a product developed by the ABS that ranks areas in Australia according to relative socio-economic advantage and disadvantage. The indexes are based on information from the five-yearly Census. The SEIFA score for Port Stephens in 2016 was 980. The SEIFA scores across Australia's local government areas range from 188 (most disadvantaged) to 1186 (least disadvantaged). Port Stephens: Ranks 286 out of 544 local government areas with SEIFA scores in Australia.

# **COVID 19 impact**

As of June 2021, the impact of on employment due to the COVID 19 pandemic saw an increase of 0.3%. Wages and salaries rose 0.8%, Port Stephens economic output increased by 1.6% and the value added impact was up 3.6%. Overall, the impact on the economy was minimal and positive for the LGA as a whole however the initial impact was negative and the economy and community saw positive changes at the start of 2021.

Administration and Support Services, Transport Postal and Warehousing, and Accommodation and Food Services were amongst the few that saw a negative long-term impact due to the COVID 19 pandemic.



# **COVID-19 Impact on Employment**

# Graph 15.0 COVID 19 Impact on employment

ABS 2016 Census, REMPLAN ABEIS Survey, ABS Weekly Payroll Jobs & Wages, O\*NET U.S Department of Labour and Grattan Institute

In the Port Stephens LGA there are four main economies;

# **Defence and Aviation Economy**

The Defence sector contributes 2,876 jobs (10.5%) to total employment. There is a large cluster of high skill and well-paid jobs in the RAAF, defence support and in aviation services. Defence is being driven by government policy, defence spending and the aviation sector by the expansion of the airport due to business and passenger growth.

\$274.0 million has been budgeted for a redevelopment project, which will sustain and improve the functionality and capability of RAAF Base Williamtown (NSW), including upgrades or replacement of critical ageing infrastructure to meet future requirements.

# **Global Manufacturing and Logistics Economy**

This sector is driven by global market growth and regional supply chains that are supporting mining and heavy engineering activities. Tomago is a strategic location for these activities. Westrac, which is located in Tomago, is a key business providing mining servicing and support.

# Services Economy

The local services economy (retail and services) are largely based at Raymond Terrace, which is the service and administrative centre for the LGA.

# Tourism Economy

The services and tourism economy is based around Nelson Bay and Salamander Bay. It is servicing both the local resident population and the strategically important tourism industry, which sees close to 1.5 million people visit the LGA annually. Tourism accounts for approximately \$641 million annually, which is 5.6% of total economic output.

In Port Stephens, tourism supports an estimated 2,059 jobs, which is 7.5% of total employment. The Accommodation & Food Services sub-sector supports 1,348 jobs. By comparison 17,097 jobs are supported by tourism in Hunter Region from a total of 280,855 jobs (6.1%) and 204,972 jobs are supported by tourism in New South Wales from a total of 3,358,119 jobs (6.1%).

# Tomago Aluminium



# Map 11.0 Tomago Aluminium, Tomago

Tomago Aluminium is one of Australasia's largest aluminium smelters and has been operating 24 hours a day since 1983.

The company contributes \$1.5 billion annually to the Australian economy, of which \$800 million is spent locally. The smelter produces 585,000 tonnes of aluminium every year, which is 25% of Australia's primary aluminium. 90% of the product is exported to the Asia-Pacific region.

Aluminium production relies on electricity to power the process 24 hours a day, 365 days a year. The production chain never stops. Tomago Aluminium uses around 10% of the New South Wales power supply to produce 580,000 tonnes of aluminium per year.

# Newcastle Gas Storage Facility

The NGSF stores and handles very large quantities of liquefied natural gas (LNG). Pipeline natural gas is converted to LNG by cooling it to -162°C and is then stored to meet peak domestic gas market requirements over winter and provides additional security of gas supply during supply disruption events. The plant is capable of processing up to 66,500 tonnes of LNG per year.

It includes an insulated, non-pressurised LNG storage tank capable of containing 30,000 tonnes or 63,000 m<sup>3</sup> of LNG, equivalent to 1.5 petajoules (PJ) of natural gas, and an associated containment area.

The NGSF stores and handles very large quantities of liquefied natural gas (LNG). As the quantity of natural gas to be stored is above threshold amounts, it has been classified as a Major Hazard Facility (MHF) by the NSW Government.

Major hazard facilities include sites like oil refineries, chemical manufacturing plants, LPG facilities, and gas-processing plants and the NGSF is one of 39 major hazard facilities in NSW.

To ensure that safety is managed to the highest standard, the NSW Government has a regulatory framework for the control of MHFs. Under this regulatory framework, AGL has had to prepare and submit to Government a formally documented Safety Case, before it gained its MHF license. AGL's Safety Case demonstrates how we safely manage and operate the site. It demonstrates the measures we have taken to minimise the likelihood of a major accident occurring, and documents the measures taken to minimise the consequences of any major accident in the unlikely event that it does occur.



Map 12.0 Newcastle AGL Gas Storage Facility, Tomago

# AGL Power Plant

AGL has put forward plans for its proposed \$400 million Newcastle gas-fired power station at Tomago to be located between the Pacific Highway and Old Punt Road on a site previously permitted for a power plant. If approved, the project, which is an integral part of the company's strategy to offset the shutdown of Liddell power station between 2022 and 2023.



Map 13.0 Proposed Gas Powered Plant, Tomago

The proposed power station has a capacity of 250 megawatts and will allow for a fast start operation using either reciprocating engines or gas turbines. The plant will deliver rapidly dispatchable power during periods of high demand.

# Newcastle Airport Business Park

The airport is jointly owned by Newcastle City Council and Port Stephens Council, and managed by Newcastle Airport Limited. The airport and associated developments support over 3,300 jobs and contributed \$1.19 billion to the economy of the lower Hunter Region in 2015.

# Annexure B – Hazards and Risks Summary

A Local Emergency Risk Management (ERM) Study has been undertaken by the Port Stephens Local Emergency Management Committee identifying the following hazards as having risk of causing loss of life, property, utilities, services and/or the community's ability to function within its normal capacity. These hazards have been identified as having the potential to create an emergency. The Port Stephens Emergency Risk Management Study should be referenced to identify the complete list of consequences and risk descriptions.

Hazard	Risk Description	Likelihood Rating	Consequence Rating	Risk Priority	Combat / Responsible Agency
Agricultural Disease (Animal/Animal)	An agriculture/horticulture incident that results, or has potential to result, in the spread of a communicable disease or infestation.	Likely	Major	Extreme	Department of Primary Industries
Bridge Collapse	Failure of a major bridge structure with or without warning owing to structural failure or as a result of external/ internal events or other hazards/ incidents.	Rare	Moderate	Medium	FRNSW (USAR) LEOCON
Building Collapse	Collapse of building owing to structural failure or impact from external/internal event of other hazards /incidents.	Rare	Moderate	Medium	FRNSW (USAR) LEOCON
Communicable Disease (Human/Animal)	Pandemic illness that affects, or has potential to affect, large portions of the human or animal population	Unlikely	Major	High	Department of Health

Hazard	Risk Description	Likelihood Rating	Consequence Rating	Risk Priority	Combat / Responsible Agency
Dam Failure	A dam is compromised that results in localised or widespread flooding.	Rare	Major	High	Dam Owners NSW SES
Earthquake	Earthquake of significant strength that results in localised or widespread damage.	Rare	Catastrophic	High	LEOCON
Explosion	Explosion caused because of an incident or accident.	Possible	Major	High	LEOCON
Fire (Bush or Grass)	Major fires in areas of bush or grasslands.	Almost Certain	Major	Extreme	NSW RFS FRNSW
Fire (Industrial)	Serious industrial fire in office complexes and/or warehouses within industrial estates.	Possible	Moderate	High	FRNSW NSW RFS
Fire (Commercial)	Serious commercial fires in shopping centres, aged persons units, nursing homes and hospitals.	Possible	Major	Extreme	FRNSW NSW RFS
Fire (Residential)	Serious residential fire in medium/high rise apartments.	Possible	Minor	Medium	FRNSW NSW RFS

Hazard	Risk Description	Likelihood Rating	Consequence Rating	Risk Priority	Combat / Responsible Agency
Flood (Flash)	Heavy rainfall causes excessive localised flooding with minimal warning time.	Almost Certain	Major	Extreme	NSW SES
Flood (Riverine)	River flows exceed the capacity of normal river systems resulting in flood waters escaping and inundating river plains.	Almost Certain	Major	Extreme	NSW SES
Hazardous Release	Hazardous material released because of an incident.	Almost Certain	Moderate	Extreme	FRNSW
Heatwave	A sequence of abnormally hot conditions having the potential to affect a community adversely.	Almost Certain	Major	Extreme	SEOCON
Landslip / Subsidence / Rock fall	Landslip/landslide resulting in localised or widespread damage.	Possible	Minor	Medium	LEOCON
Storm	Severe storm with accompanying lightning, hail, wind, and/or rain that causes severe damage and/or localised flooding.(includes tornado)	Almost Certain	Major	Extreme	NSW SES
Transport Emergency (Air)	Aircraft crashes in LGA resulting in large number of fatalities, injuries and/or damage to property.	Rare	Catastrophic	Extreme	LEOCON

Hazard	Risk Description	Likelihood Rating	Consequence Rating	Risk Priority	Combat / Responsible Agency
Transport Emergency (Road)	A major vehicle accident that disrupts one or more major transport routes that can result in risk to people trapped in traffic jams, restrict supply routes and/or protracted loss of access to or from the area.	Almost Certain	Minor	High	LEOCON
Transport Emergency (Sea)	A major accident that results in environmental damage and major recovery operation	Rare	Major	High	Relevant Port / Maritime
Tsunami	A tsunami wave of magnitude that presents a risk to land and marine elements.	Rare	Catastrophic	High	NSW SES
Utilities Failure	Major failure of essential utility for unreasonable periods of time as a result of a natural or man-made occurrence.	Possible	Major	Extreme	LEOCON

# Annexure C – Local Sub Plans, Supporting Plans and Policies

Responsibility for the preparation and maintenance of appropriate sub and supporting plans rest with the relevant Combat Agency Controller or the relevant Functional Area Coordinator.

The sub/supporting plans are developed in consultation with the port Stephens LEMC and the community.

The plans listed below are supplementary to this EMPLAN. The sub/supporting plans have been endorsed by the LEMC and are determined as compliant and complimentary to the arrangements listed in this EMPLAN.

These plans are retained by the LEMO on behalf of the LEMC and public release versions are available on the Council Website.

Plan/Policy	Purpose	Combat / Responsible Agency
Bush Fire Risk Management Plan	A strategic document that identifies assets at risk and sets out a program of coordinated, multi-agency treatments to reduce the risk of bushfire to key assets.	NSW Rural Fire Service
Port Stephens Flood Emergency Sub Plan	This plan covers preparedness measures, the conduct of response operations and the coordination of immediate recovery measures from flooding within the Port Stephens Council area. It covers operations for all levels of flooding within the LGA.	NSW State Emergency Service
Dam Safety Emergency Plan	A Dam Safety Emergency Plan outlines roles and responsibilities for monitoring and responding to incidents relating to the Bagnall Beach Road Detention Basin.	Port Stephens Council

Plan/Policy	Purpose	Combat / Responsible Agency
Hunter Valley Flood Mitigation Scheme – Flood Emergency Response Plan (Lower Hunter Valley)	The purpose of this Flood Emergency Response Plan is to detail arrangements for preparedness, response and recovery of the Hunter Valley Flood Mitigation Scheme (HVFMS). The scope of the plan is to: • Outline the HVFMS • Outline emergency management arrangements to operate the scheme • Identify linkages with other organisations This document is an internal document to guide DPIE HVFMS operations and does not form part of broader NSW emergency management planning arrangements. Arrangements for the emergency management of floods and flood intelligence are outlined in the State Flood Plan and relevant Local Flood Plans.	DPIE – Hunter Valley Flood Mitigation Scheme
Newcastle Airport Aerodrome Emergency Plan	The Aerodrome Emergency Plan covers the roles and responsibilities for a number of possible scenarios at the airport.	Newcastle Airport
Port Stephens Tsunami Plan	The Port Stephens Tsunami Plan identifies emergency management arrangements for the management of a tsunami in the LGA.	NSW State Emergency Service
RAAF Williamtown Airfield Emergency Plan	The RAAF Williamtown Airfield Emergency Plan covers the roles and responsibilities of a number of Military and Civilian aircraft incident scenarios for RAAF Williamtown Airfield and areas of operation.	Royal Australian Air Force

Plan/Policy	Purpose	Combat / Responsible Agency
AGL Newcastle Gas Storage Facility Emergency Response Plan	The AGL Newcastle Gas Storage Facility Emergency Response Plan identifies emergency management arrangements for the management of the Major Hazard Facility	AGL
Thales Group Emergency Plan	The Thales Group Emergency Plan identifies emergency management arrangements for the management of the Major Hazard Facility at Williamtown RAAF base	Thales Group
Coastal Waters Marine Pollution Plan	The NSW State Marine Pollution Contingency Plan has been prepared in support of the New South Wales State Emergency Plan (EMPLAN) and the National Plan for Maritime Environmental Emergencies (National Plan) to outline arrangements for dealing with marine oil or chemical spills and maritime incidents such as groundings, collisions, disabled vessel or fire on a vessel that could result in an oil or chemical spill into State waters of NSW.	Transport NSW – NSW Maritime

Annexure F – Vulnerable Facilities List

The Vulnerable Communities list will be provided as an appendix to this document.

# Annexure G – Consequence Management Guides

The following consequence management guides relate to hazards that are rated Moderate or require significant coordination (Delete as appropriate).

Agricultural Disease	Hazardous Materials
Bridge Collapse	Heat Wave
Building Collapse	Landslip
Dam Failure	Pandemic
Earthquake	Storm
Evacuations	Transport Emergency – Air
Fire – Bush/Grass	Transport Emergency – Road
Fire – Commercial	Transport Emergency – Sea
Fire – Residential	Tsunami
Flood – Flash	Utilities Failure
Flood – Riverine	

# **Document Control**

Version	Date	Author	Details
1.0	October 2016	Cameron Donaldson	First endorsed by the LEMC 14 November 2016
2.0	December 2021	Charles Rodgers	Review of document