



Flash Flooding

www.ses.vic.gov.au















## Why Should You Plan for Flash Flooding?

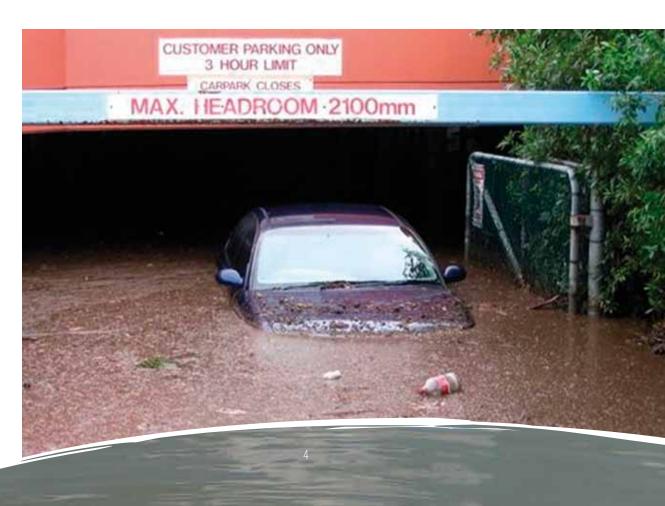
## ... because flooding is inevitable

Floods are a natural occurrence where your business is located. In fact, over time, floods have helped form the land on which your business is built. This means that future flooding for you is inevitable and is a high risk for your business.

Flooding is extremely variable in Australia. You may experience extended dry conditions but this can quickly change. It is therefore critical that you prepare for flooding.

# IT'S ONLY A MATTER OF TIME RAIN CAN TURN INTO A FLOOD IN A FLASH

Never drive through floodwater, it is the main cause of death during flooding. 66Only those who are not prepared get caught out 99







## **How Will Flash Floods Impact on Your Business?**

Floods can be a threat to:

#### Life

 Floods can be life-threatening to you, your employees and your customers.

#### **Property**

- Floods cause hundreds of thousands of dollars worth of damage to business stock, plant, equipment, furniture and fittings every year
- Damage can be caused by water inundation, debris, humidity, contamination, mould and power disruption
- Insurance policies that cover your business for flood damage may be difficult to obtain and can be expensive.

#### **Profits**

- It usually takes a week or more to clean up after a flood, adding to your costs and stress. Your business may have to close for an extended period of time
- It can take several weeks or months for your business to return to normal. Your customers may take their business elsewhere.

Developing a Business FloodSafe Plan can:

- Save lives and prevent injury
- Comply with Occupational Health and Safety (OH&S) regulations
- Reduce damage to stock, plant, equipment and fittings
- Reduce the amount of time that you are unable to operate
- Ensure customers will return when trading commences
- Minimise the loss of profits
- Protect employment
- Protect your business reputation and image.

Being prepared can reduce the economic cost of floods.

Damage could have been reduced by an estimated eighty per cent if businesses had developed a flood action plan





Businesses need a FloodSafe Plan to minimise damage to stock.

## **How Much Could a Flood Cost Your Business?**

Answer these questions to find out.

1. What is the replacement cost (\$) of stock, plant, equipment	ent and fittings located up to 1.5m above	e your floor level?
	STOCK	\$
	EQUIPMENT	\$
	FITTINGS	\$
	TOTAL	\$
2. If closed for one week to clean up, what would be the val payment regardless of whether or not your business is op	· · · · · · · · · · · · · · · · · · ·	loan repayments that require
	RENT/LOAN	\$
	WAGES	\$
	OTHER	\$
	TOTAL	\$
3. What would be the profit (\$) loss if your business was clo	osed for a week?	
	WEEKLY PROFIT	\$
Total Loss (add all three categories):		\$

The flood calculator produces an estimated amount that your business may lose if it were flooded to approximately one and a half metres above floor level. Losses will increase with greater depths of flooding.

Being FloodSafe is not expensive or time consuming...
it is your best insurance



# <sup>66</sup>At least 275 Australians have died in floods from work-related causes<sup>99</sup>

#### **Before You Begin**

It is important to understand what type of flooding could affect your business and what are the chances of a flood event occurring. It is also important to realise the implications that flooding has on OH&S obligations and practices.

#### **Flash Flooding**

Your area has a history of severe flash flooding. Flash floods usually result from intense storms dropping large amounts of rain within a brief period. Flash floods can occur with little or no warning and can reach full peak in only a few minutes.

Water from flash flooding may enter your business property or building. Floodwater can be very dangerous. If you or your employees are trapped by flooding it may be safer to shelter within the highest part of your building than try to evacuate through dangerous floodwater and to follow all advice given to you by emergency services.

You can also be indirectly affected by flooding even if your premises are not actually inundated as access roads may be closed and power, water and the phone may be cut.

Employees who are away from the business premises should be told not to return until floodwater has receded. Never drive, ride or walk through floodwater. This is the largest cause of death during floods.

#### **Chance of Flash Flooding**

It is important you understand the chance of your business being flooded as well as the possible impacts. This information can be obtained from your local council or State Emergency Service (SES).

The table below allows you to work out the chance of your business being flooded in a 10 and 20 year period. For example, if you are in the 1 in 100 year flood level, there is a 10% chance that you will experience a flood this high or higher at least once in the next 10 years.

However, it is important to remember that events can occur at a more regular interval, with many cases of 1 in 100 year floods occurring in consecutive or even the same year.

Flood Level	Chance in next 10 years	Chance in next 20 years
1 in 20	40%	64%
1 in 50	18%	33%
1 in 100	10%	18%
1 in 500	2%	4%



A commercial centre floods in 2009.



#### OH&S

If flooding is imminent, your main priority is to ensure the safety of your employees and customers.

Flooding is a known risk to your business. As such, you must minimise OH&S risks relating to flooding for your employees and customers. There are numerous potential risks to the health and safety of your employees associated with flooding, as well as potentially posing a risk to your customers, particularly if you provide accommodation.

It is important to identify procedures to be followed during and after a flood and provide details of how you will manage the risks in these areas in your business OH&S plan. There may be additional risks to those listed below.

#### **During a Flood**

- Evacuation (e.g. ensure that employees and occupants have enough time to evacuate safely to a location if they are instructed to)
- Manual handling and raising of stock, plant, equipment and furniture
- Darkness (e.g. make sure there is adequate light as flood preparations may need to be made at night or in overcast conditions)
- Protective clothing (solid non-slip footwear is essential as a minimum)
- Coming into contact with floodwater
- Avoid entering floodwater outside the building on foot or in vehicles (e.g. risk of electrocution, drowning, injury from submerged objects or uneven ground). Most flood deaths occur when people enter floodwater.

#### After a Flood

Only re-enter the premises after floodwater has completely subsided and the SES have advised it is safe to do so. Make sure you undertake an OH&S risk assessment before entering the building. There may be additional risks to those listed below.

- Structural safety of buildings
- Safety of electrical and gas supplies
- Slips, trips and falls in mud and water
- Cleaning up, repairing and re-stock
- Contamination (e.g. sewage, chemicals and disease in water)
- Safety of plant and equipment
- Sharp debris
- Venomous animals (e.g. snakes and spiders seek refuge in buildings and debris).

Where businesses have been flooded, it is imperative that checks of wiring and other electrical installations are made before appliances are connected and turned on. Such checks must be carried out by a licensed electrician or licensed electrical inspector.

Do not use any water damaged electrical appliances until they have been checked for safety by a qualified electrical technician.

Do not expect them to work safely once they have dried out.

Some useful websites for further flooding and OHS information:

- www.ses.vic.gov.au
- www.education.vic.gov.au/hr/ohs/hazards/default.htm
- www.health.gov.au
- www.bom.gov.au/water/floods/document/What\_todo\_ floods.pdf.

Whole business districts can be affected.







The SES is the primary response agency in the event of a flood.

## A Guide to Using the Business FloodSafe Toolkit

This toolkit will help you prepare a plan to assist you to prepare for possible flooding that can impact your business.

The plan you develop using the toolkit is called a Business FloodSafe Plan and it should be part of your business continuity management. Continuity management minimises the impacts of situations than can prevent the business running for extended periods of time. These situations may include fires, earthquakes, storms, floods, tsunami, terrorist attacks and major electrical failures. Many of the actions in your Business FloodSafe Plan are applicable to the other situations.

#### How to Create a Business FloodSafe Plan

#### 1. Online

The quickest and easiest way to create and manage your Business FloodSafe Plan is to go the SES's website at www.ses.vic.gov. au and click on the Business FloodSafe section. This will take you to the Business FloodSafe Toolkit where you can begin to build a Business FloodSafe Plan.

The online Business FloodSafe Toolkit is an interactive and flexible template which is self-guided to allow a quick and easy development of your Business FloodSafe Plan. You can customise the plan as much as you like or you can simply use the suggested details in the template.

You will be asked to create a username with an email address and to choose a password. Once you have entered in these details, you will be able to log on at any time to review, change and update your plan. Your plan will be saved on the SES server so even if your computer is damaged or lost, your FloodSafe Plan will be stored. The Plan can also be printed out or downloaded and saved to a computer.

#### 2. Hard Copy

A hard copy version of the plan has been provided on page 12 of this toolkit, which you can fill in with details relating to your business.

#### **Top Tips**

- Involve as many employees as possible in the creation and management of the plan to build ownership and understanding. This can increase employees' performance when a flood does occur
- Duplicate your plan so that you have at least three copies. One should be displayed at your business premises, one should be stored in your Emergency Kit and the other should be stored off-site
- Display FloodSafe posters (available from the SES website) to help develop your employees' awareness of flooding and understanding of your Business FloodSafe Plan.



#### Creating Your Business FloodSafe Plan

Whether you complete the plan online or use the sheets in this toolkit, there are three easy parts (which cover six steps) that must be completed to have an effective Business FloodSafe Plan in place for your business when a flood occurs.

Part A		Part B			Part C
Understanding yo	our problem	Develop your p	lan		Manage your plan
Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Impacts	Priorities	Actions	Triggers	Contacts	Your plan

#### Part A: Understanding Your Problem

#### Step 1 Identify the Impacts

You need to identify what the main impacts are on your business if it is affected by flooding. There are four recommended impacts that are included in the plan which affect every business:

- · People's health and safety are compromised
- Property is damaged or destroyed
- Profits are lost or service provision stopped
- Paperwork and records are ruined.

You should also add any other potential impacts that are specific to your business.

TASK — In your Business FloodSafe Plan, either online or using the plan in this toolkit, list any other business specific impacts of flooding that could affect your business in the Impacts Table.

#### Step 2 Prioritise the Impacts

Some of the impacts you write down are possibly more important to your business than others. You should prioritise your impacts and keep these priorities in mind when you are developing the rest of your Business FloodSafe Plan.

For example:

People's health and safety are compromised — High priority Paperwork and Records are ruined — Low priority

TASK — Prioritise your list of impacts using the scale Very High, High, Medium and Low in the Impacts Table

#### Part B: Develop Your Plan

#### **Step 3 Identify Actions**

Actions need to be identified that can minimise the impacts of flooding on your business. They need to be broken up into four categories:

- Now and/or Always
- When flash flooding is likely
- During a flash flood
- After a flash flood.

A list of actions that should be included in your Business FloodSafe Plan is provided in the Business FloodSafe Toolkit template at the back of this booklet. These actions can be edited to better suit your business needs or not used if not appropriate. You should also add actions for impacts that you have identified as being specific to your business and identify when these should be undertaken. You can customise your plan with as much detail as you wish in the "How Do I?" section for each action.

TASK — Fill in any other actions that you can identify as being specific to your business. Fill out specific details regarding how to carry out the actions listed in the table under the How Do I section.

#### Step 4 Identify When to Undertake Your Actions

There are certain situations or triggers that should prompt your actions when flooding occurs. In areas prone to flash flooding, the Bureau of Meteorology (BoM) may indicate flooding through Severe Weather Warnings or Severe Thunderstorm Warnings. These warn of sudden heavy rainfall that can cause flash flooding and are triggers to prompt you into action.

Local radio stations broadcast these warnings from the BoM. These often refer to areas or regions rather than specific suburbs or towns. Listen carefully to determine if your business is about to experience possible flash flooding.



Very heavy rainfall in your area may be a sign of possible flash flooding. If you feel in danger, don't wait for a warning, act immediately.

The triggers should also be broken up where possible into the three stages of flooding;

- When flash flooding is likely
- During a flash flood
- After a flash flood.

A list of potential triggers has been inserted into the Business FloodSafe Plan template at the back of this booklet. These triggers can be edited to better suit your business or not used if not appropriate. However, there may also be other triggers specific to your area that will need to be considered.

#### **Top Tips**

- When developing your triggers it is important to estimate
  how long it will take to complete actions compared with how
  much time you may have available. During flash flooding
  there maybe little time to act. Also consider the resources
  required to complete each action as well as all actions in total
  (e.g. employees, equipment, vehicles)
- Be aware that in the case of flash flooding, the first warning you could get might be intense rainfall or rising floodwater.
   Warnings may be self-evidenced and not come from the BoM or other emergency services. Your business needs to monitor the weather situation and be prepared to put in place your Business FloodSafe Plan without a trigger from other services
- Most businesses are unattended for two-thirds of the time.
   A flood trigger could occur while the business is closed. You need to consider this when planning your flood actions.

TASK — Check the list of triggers that apply to your local area and ensure they are put in your Business FloodSafe Toolkit at the top section of the Actions Table

#### **Step 5 Emergency Contacts list**

Your Business FloodSafe Plan should include a copy of an up-to-date contacts list including employees. A copy should also be kept in your Emergency Kit and another located off site (and out of the floodplain).

The SES has included their details in the contacts list in the Business FloodSafe Plan template. Other relevant sources have also been suggested for you to complete their contact details.

Your emergency contacts list should also include other surrounding businesses that you could warn in the event of a flood or have reciprocal help arrangements with.

TASK — Fill in the contacts list including employees, emergency services and other contacts. Store one copy in your Emergency Kit and one copy with your Business FloodSafe Plan.

#### Part C: Manage Your Plan

# Step 6 Your Plan (Implementation, Maintenance and Review)

Whether you have completed your Business FloodSafe Plan online or using the hard copy template in the Business FloodSafe Toolkit, the SES suggests that you print three copies:

- One to display in your workplace
- One for your Emergency Kit
- One to be stored off-site.

If you have completed your Business FloodSafe Plan online, you can download, edit, print and save a copy on to your local computer by logging in with your username and password.

You should implement your Business FloodSafe Plan by training employees to have knowledge and understanding of the actions and requirements included and training should be conducted regularly.

You should also maintain your Business FloodSafe Plan by ensuring that all details are kept up-to-date and those things needed to prepare for a flood (e.g. Emergency Kit) are in place.

You also need to regularly review your Business FloodSafe Plan. Reviews should critically examine all aspects including making sure the Business FloodSafe Plan works as it is supposed to, accounting for changes in risk, improvements, lessons learnt and changes on the floodplain. Employees should be involved in reviewing the Business FloodSafe Plan and be trained and exercised accordingly if needed.

Reviews should also be completed after:

- Training drills and exercises
- Flooding
- Changes to your building design and layout
- Changes in employees responsibilities
- Changes in business activities
- Changes in the river catchment.

TASK — Fill in details of the Review Table at the end of the Business FloodSafe Plan, including when your annual review is due and any other circumstances that requires a review.



## **Your Business FloodSafe Plan**

Business Name		
Business Contact Person		
Address		
Telephone Number		
This copy to be kept at		

## Impacts

Potential impacts of flooding on our business	Priority/Severity Level (Very High/High/Medium/Low)
Peoples health and safety are compromised	
Property is damaged or destroyed	
Profits are lost or service provision stopped	
Paperwork and records are ruined	

12



**NOW AND/OR ALWAYS** 

TRIGGERS

	usiness
-	your b
	Ind on
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	pact o
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ACTIONS		HOW DO 1?			
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $(\sqrt{\ })$
Create, update and review a Business FloodSafe Plan using the Business FloodSafe Toolkit (www.ses.vic.gov.au)					
Prepare an Emergency Kit which includes a battery powered radio, spare batteries, torch, first aid kit, emergency contact numbers, a copy of your Business FloodSafe Plan and any other emergency items relevant to your business					
Display your Business FloodSafe Plan and poster at your business premises, keep another copy of your plan off					
Inform staff of the risks that flooding can pose to them and to the business					
Ensure OH&S procedures cover specific flood risks for your business					
Encourage staff to participate in the development and implementation of the Business FloodSafe Plan					



ACTIONS		HOW DO 1?			
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $(\sqrt{\ })$
Incorporate flood awareness in staff induction training					
Train staff in flood response procedures					
Maintain an up-to-date list of emergency contacts numbers for staff and services. Keep a copy in your Business FloodSafe Plan, Emergency Kit and another off-site					
Investigate options to flood-proof your business. Where possible, use furniture, floor coverings and fittings made of flood resistant materials and store essential equipment and fittings well above floor level					
Ensure that stock, plant, equipment, furniture and fittings can be raised and/ or removed quickly and easily					
Keep computer equipment off the floor					
Investigate the use of flood-proofing devices for your business					
Identify an alternative business location and have call diversion arrangements to allow the continuation of business operations off-site					
Have alternative supply arrangements					
Have reciprocal help agreements with similar businesses in areas that are unlikely to flood at the same time					



	Est. time Completed needed $(\sqrt{\ })$								
	Est. nee								
	What you will need								
H0W D0 I?									
HC	Who will do it								
	How to do it								
		-stocking	back customers	ions to be nd after flooding eg.	Backup important computer files each time they are updated and store those backups off-site and out of the floodplain	Store critical archival paper-based records off-site and out of the floodplain			
ACTIONS	Action	Have strategies for re-stocking	Identify ways to win back customers	Identify critical functions to be maintained during and after flooding eg. payroll	Backup important computer files each time they are updated and store those backups off-site and out of the floodpli	Store critical archival paper-based off-site and out of the floodplain			



# TRIGGERS

WHEN FLOODING IS LIKELY

• The BoM issuing a Severe Weather Warning or Severe Thunderstorm Warning indicating a likelihood of flash flooding

Heavy rainfall Rising floodwater.

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ACTIONS	:	HOW TO DO		;	
Action	How to do it	Who will do it	What you will need	Est. time needed	Est. time Completed needed $(\sqrt{\ })$
Be aware: the first warning you get could be intense rainfall, rising floodwater or a Severe Weather Warning					
Locate and activate your Business FloodSafe Plan					
Tell staff, guests or contractors of the Flood Watch or Severe Weather Warning and of the need to stay in the building if trapped by flooding					
Tell staff that are away from the premises to shelter in a safe location away from the floodplain					
Listen to the local radio station for information, updates and advice					
Be alert, keep an eye on the weather					

If safe to do so, evacuate early before

flooding occurs





ACTIONS		HOW TO DO	0		
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $(\sqrt{\ })$
Back up important computer files and take these off-site and out of the floodplain					
Copy critical paper-based records and take these off-site and out of the floodplain					



# TRIGGERS

**DURING A FLOOD** 

The BoM issuing a Severe Weather Warning or Severe Thunderstorm Warning indicating a likelihood of flash flooding The BoM issuing a Flood Warning

Announcements through your local media

Rising floodwater.

ACTIONS		H0W T0 D0			
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $(\sqrt{\ })$
If safe to do so, stay inside your building with your staff and any onsite customers. Shelter in the highest part of your building					
Keep in contact with staff and keep them updated on the situation. Tell staff that are away from your business not to return until floodwater has receded					
Remind staff of OH&S procedures and added risks					
Keep listening to the local radio station for information, updates and advice					
Follow advice of emergency services					
If you are asked to evacuate by emergency services, leave immediately and shelter at an appropriate place on higher ground					



ACTIONS		H0W T0 D0			
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $()$
If you are asked to evacuate take your Emergency Kit and turn off electricity, gas and water at the mains. Lock the premises and notify security					
Never drive, ride or walk through floodwater					
There may be limited opportunity to protect property once flash flooding occurs. Priority must be given to ensuring the safety of staff and customers					
Maintain critical business functions e.g. payroll					
Postpone supply deliveries					
Divert business calls to an alternative phone					
Notify customers or dients of alternative business arrangement if necessary					
If you are asked to evacuate, take computers, cash and critical records to a flood-free location					
If evacuating take important records and files					



ACTIONS		H0W T0 D0			
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $(\sqrt{\ })$



**AFTER A FLOOD** 

# TRIGGERS

The SES or other emergency services issuing advice that it is safe to return Rainfall ceased and floodwater receded.

ACTIONS			.MOH	H0W T0 D0	
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $()$
Never drive, ride or walk through floodwater					
Keep listening to the local radio station for information, updates and advice					
Leave only once floodwater has receded					
Before re-occupying the premises, undertake an OH&S risk assessment					
Check with SES before allowing people back onto the site					
Wear protective clothing including enclosed, waterproof, punctureresistant gloves, sturdy shoes and long pants					
Ensure you wash properly after cleaning flood damaged premises					
Restock your Emergency Kit					



ACTIONS			H0W T0 D0	TO DO	
Action	How to do it	Who will do it	What you will need	Est. time needed	Completed $()$
Have utilities professionally checked					
Review your flood actions and revise your Business FloodSafe Plan					
Remove debris and clean, repair and disinfect premises					
Replace essential plant, equipment and stock as soon as possible with flood-resistant products					
Replace lost furniture, floor coverings and fittings with more flood resistant products					
Salvage, clean and dry as much as possible					
Notify customers or clients as soon as you resume trading					
Implement any reciprocal help arrangements					
Implement incentives to stimulate trade if you experience a down turn					
Re-stock and increase staff if your business will be critical to the communities flood recovery work					
Maintain critical business functions e.g. payroll					



	Completed ( $\sqrt{\ }$ )						
HOW TO DO	Est. time needed						
.MOH	What you will need						
	Who will do it						
	How to do it						
ACTIONS	Action	Restore critical records, cash, computer equipment and files	Evaluate storage procedures after flood event				



### **Employees Emergency Contacts**

Name	Position	Emergency Number	Alternative Number



## **Emergency Contacts**

Name	Number	Alternative Number
Ambulance/Police/Fire	000	
SES	132 500	
Business Owner		
Building Owner		
Security		
Water and Sewage		
Gas and Electricity		
Medical		



#### **Plan Review**

Carry out a review of your Business FloodSafe Plan, at least annually and when circumstances change, to make sure it works like it is supposed to and to account for any change in risks.

Record the details of the review in the table below.

Review Date	Reason for Review	Any Changes Made



Acknowledgement: the Business FloodSafe program was orginally developed by the NSW State Emergency Service through the Hawkesbury Nepean Project.