



**GOVERNMENT OF
WESTERN AUSTRALIA**

**STATE HAZARD PLAN
FOR
STORM**

(WESTPLAN – STORM)

Prepared by



APPROVED AT STATE EMERGENCY MANAGEMENT COMMITTEE MEETING

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Amendment List

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2	September 2006	Amend 2004 version, congruous with the provisions of the <i>Emergency Management Act 2005</i> .	
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A copy of this Westplan is available on the State Emergency Management Committee (SEMC) internet site:

www.semc.wa.gov.au/resources/policies-and-plans/westplans

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PART 1 INTRODUCTION

The highest insurance losses in Western Australia in the last forty years have been from severe storms accompanied by extreme wind, rain and hail. Between 1970 and 2013 insurance costs were 1.2 billion dollars. These storms can occur anywhere in the State, but the majority of insurance losses have been associated with cool season storms in southwest areas¹.

This Westplan has been prepared to meet the State Emergency Management Committee (SEMC) planning requirements under the *Emergency Management Act 2005 (EM Act 2005)*.

The Department of Fire and Emergency Services (DFES), through the Fire and Emergency Services (FES) Commissioner, is the Hazard Management Agency for storm [*Section 17(2) Emergency Management Regulations 2006*].

1.1 Aim and Objectives

The aim of Westplan - Storm is to detail the emergency management arrangements for storm in Western Australia.

The objectives of this Westplan - Storm are to:

- ensure Western Australia has effective emergency management arrangements in place for a storm emergency;
- define the responsibilities of DFES, Australian Government agencies, State Government agencies, local government, combat agencies and support organisations in the event of a storm emergency;
- detail arrangements in relation to the control and coordination of, and response to, a storm emergency;
- provide guidance for storm emergency management plans at district and local level; and
- detail arrangements for the review of planning at all levels.

1.2 Scope

Westplan - Storm covers emergency management storm planning within the geographic boundaries of Western Australia, including adjacent waters but excluding high seas, Australian waters, Cocos (Keeling) Islands and Christmas Island. The plan deals with mitigation strategies, preparedness for storm, response to storm and initiation of recovery arrangements following the impact of a storm.

1.3 Hazard Definition

A thunderstorm is a sudden electrical discharges manifested by a flash of light (lightning) and a sharp or rumbling sound (thunder). Thunderstorms are associated with convective clouds (Cumulonimbus) and are, more often, accompanied by precipitation in the form of rain showers or hail.

¹ Productivity Commission (2014) Natural Disaster Funding Arrangements. Draft Report, Vol. 1, p. 5.

A severe thunderstorm produces one or more of the following:

- Wind gusts of 90 km/h or more;
- Very heavy rainfall that may lead to flash flooding;
- Hail with a diameter of 2cm or more; and
- Tornadoes

The term 'storm' is used to describe thunderstorms but also cold fronts and troughs which produce significant or severe weather.

A storm emergency is an “emergency” as defined in the *Emergency Management Act 2005*, as the result of a storm or potential storm.

1.4 The Storm Hazard

Western Australia has a history of being impacted by severe storms. These storms have caused damage from lightning, wind, rain, hail, flash flooding, severe sea conditions, storm surge flooding and coastal erosion. Their effects impact on residential, commercial, industrial and service sectors of our community. They disrupt lifelines, burden emergency services with an increased work load and can cause injury and death.

Severe storms can occur at any time of the year, but tend to follow two distinct patterns, one for the warm season (generally October to April) and one for the cool season (generally May to September).

A more detailed description of the storm hazard and its effects is at Appendix B.

1.5 Special Planning Considerations

1.5.1 Community Factors

Society is increasingly dependent on services and infrastructure such as energy supply, transportation, water, sewerage and drainage systems, and communication networks. This vital and critical infrastructure can be vulnerable in a storm emergency. Restoration may take significant time and prolonged outages may create secondary effects in the community.

Some facilities such as power, communication and transportation networks are particularly susceptible to the effects of storms.

As communities become more connected through modern telecommunications, increasing expectations are placed on emergency management agencies to respond sooner, over wider areas and in ways that are more sophisticated. There is also a growing need for public information.

A number of people within the community have special-needs and require particular consideration in state, district and local level plans. Paragraph 3.2.1 identifies these special-needs groups.

The need for a sound level of storm planning is increasingly important in areas of the State where storms are a threat to human life, activities, property and community lifelines.

1.6 Related Documents

This document is to be read in conjunction with the following suite of State Emergency Management (EM) documents:

- *Emergency Management Act 2005* (EM Act);
- *Emergency Management Regulation 2006* (EM Regulation);
- State Emergency Management Policy (State EM Policy);
- State Emergency Management Plan (State EM Plan);
- Relevant State Hazard Specific Plans (Westplans);
- State Emergency Management Procedures (State EM Procedures);
- State Emergency Management Guidelines (State EM Guidelines); and
- State Emergency Management Glossary (State EM Glossary).

It should be noted that the State EM Procedures are divided into Prevention, Preparedness, Response and Recovery sections, with individual procedures referred to as 'State EM Prevention Procedure', 'State EM Preparedness Procedure', 'State EM Response Procedure' and 'State EM Recovery Procedure', as applicable.

In addition, the following documents are applicable to this plan:

- *Fire and Emergency Services Act 199*;
- *Fire and Emergency Services Regulations 1998*;
- *Planning and Development Act 2005*;
- Westplan – Flood;
- State Health Emergency Response Plan;
- State Emergency Welfare Plan and its annexures on Reception and Registration and Reunification;
- State Telecommunications Plan;
- State Emergency Public Information Plan; and
- Local Emergency Management Arrangements.
-

1.7 Authority to Plan

The SEMC is responsible for arranging the preparation of State emergency management plans [*Section 18(1) EM Act 2005*]. The Fire and Emergency Services (FES) Commissioner, as the prescribed Hazard Management Agency

(HMA) for storm, is responsible for coordinating the development and maintenance of Westplan - Storms².

1.8 Plan Responsibilities

The development, implementation and revision of Westplan - Storm is the responsibility of DFES in consultation with key stakeholders, emergency management agencies and other support organisations in accordance with State EM Policy 1.5.

1.9 Exercise and Review Periods

1.9.1 Exercising

Westplan - Storm will be exercised annually at the State and regional level in accordance³. The activation of this Westplan counts as an exercise, if the post incident/exercise report is completed.

1.9.2 Review

Westplan - Storm will be reviewed by DFES, annually, with a major review every five years.

1.10 Organisational Roles and Responsibilities

This Plan details organisational responsibilities at a State level and requires that participating organisations support planning at district and local level.

As the HMA for storm emergencies in Western Australia, DFES is responsible for ensuring effective preparedness and response to this risk within the community.

A coordinated response to a storm emergency requires emergency management agencies and support organisations to undertake a variety of agreed and statutory responsibilities. These responsibilities are outlined at Appendix C.

² State EM Policy Section 1.5.

³ State EM Policy Section 4.8 and State EM Plan Section 4.7.

PART 2 PREVENTION AND MITIGATION

2.1 Responsibility for Prevention and/or Mitigation

Prevention and mitigation strategies for storm emergencies within WA rely heavily on the management of development (land use planning) and the built environment. Responsibilities in these areas are divided between some State agencies and local government.

DFES has overall responsibility for prevention and mitigation aspects of storms, within the limitations of its legislative powers and resource capabilities. DFES is also required⁴ to coordinate the development and maintenance of Westplan - Storm, including prevention aspects.

2.2 Legislation and Codes

Legislation is one of the key initiatives to ensure that prevention and mitigation strategies are consistent and enforceable. Legislation applicable to managing the storm risk includes:

- *Building Act 2011;*
- *Building Regulations 2012;*
- *Emergency Management Act 2005;*
- *Emergency Management Regulations 2006;*
- *Fire and Emergency Services Act 1998;*
- *Fire and Emergency Services Regulations 1998;*
- *Local Government (Miscellaneous Provisions) Act 1960;*
- *Local Government Act 1995;*
- National Construction Code of Australia;
- *Occupational Safety & Health Act 1984;*
- *Planning and Development Act 2005; and*
- *Meteorology Act 1955.*

2.3 Prevention Strategies

It is impossible to prevent storms from occurring, but strategies to mitigate storm impacts on communities can include:

- engineering solutions, such as hardening buildings;
- social solutions, such as community education; and
- enforcement of legislative requirements, such as building restrictions in areas identified as being at risk from storm.

⁴ State EM Policy Section 1.5.

2.4 Mitigation Strategies

Mitigation strategies contribute to the increased resilience and reduction in vulnerability of our communities by proactively reducing or minimising the effects of hazardous events.

Key strategies are employed to mitigate the risks associated with storm emergencies. These strategies are shown in Table 1.

Table 1: Storm Mitigation Strategies	
Strategy	Responsible Organisations
Storm risk identification and mapping.	DFES, BoM, Geoscience Australia
Application and enforcement of National Construction Code of Australia and informed land use planning for vulnerable areas.	Local governments
Participation in research and development programs directed towards increased mitigation, improved community awareness and better information dissemination.	DFES/BoM
Promoting an improved state of resilience within communities to improve the management of future risks.	DFES
Developing resilience in the community and minimising the vulnerability of communities to effects of storm.	DFES in partnership with local governments
Promote the uptake and maintenance of adequate insurance against storms.	DFES, insurance industry
Promotion of and participation in community awareness campaigns for 'at risk' communities.	Local governments assisted by DFES
Provision of support to voluntary emergency organisations.	DFES, local governments
Provision of storm advice to the community.	DFES, BoM
Identification of suitable buildings for designation as Welfare/Evacuation Centre's.	Department for Child Protection and Family Support (DCPFS) in consultation with local governments
Maintenance of a register of potential welfare/evacuation centres.	DCPFS in consultation with Local Emergency Management Committee
Participation on local and regional/district storm planning committees (where practicable).	Local governments, DFES, Main Roads Western Australia (MRWA), Western Australia Police, DCPFS
Ensuring the sustainability of service delivery of critical infrastructure through design and maintenance standards.	MRWA, utility providers
Providing advice in relation to the design and maintenance status of critical infrastructure services and access routes in 'at risk' communities.	MRWA, utility providers
Structurally retrofit, where necessary, public buildings which provide essential services following any storm event. These facilities should be examined by suitably qualified engineers on a site-by-site basis to assess their expected performance under storm loadings.	All relevant agencies
Participate in research in social vulnerability models as they apply to storms.	Relevant agencies and local governments

Table 1 Storm Mitigation Strategies

PART 3 PREPAREDNESS

3.1 Responsibility for Preparedness

Preparedness activities focus on developing systems to ensure the delivery of essential emergency response capabilities when an emergency occurs. These systems include development of plans and procedures, design of organisational structures, implementation of training, development of resource management systems, and community education related to preparation and response.

This section of the Plan outlines measures to be taken in preparation for storm emergencies together with relevant responsibilities. Most of these activities commence well before the storm emergency, often years before, and regular maintenance, testing and checking of these measures should be undertaken to retain confidence in their performance during emergencies.

As the HMA for storm, the FES Commissioner has responsibility for:

- promoting an improved state of resilience within communities to improve the management of future risks; and
- ensuring that all emergency management activities related to storm preparedness are undertaken.

3.2 Planning and Arrangements

Emergency management plans are to be developed and based on:

- best practice principles;
- technical and scientific knowledge;
- historical data and information; and
- local knowledge and experience.

Successful storm operations depend on good planning, effective resource utilisation and a coordinated response which is timely, efficient and effective.

The concept of this Plan is to employ and coordinate the resources of State and Australian Government departments, authorities and agencies; resources available to private industry; and resources available to volunteer groups, for storm operations. This concept is based on:

- availability of the DFES 24/7 State Operations Centre (SOC) for receipt of storm notification reports;
- establishment of operational facilities at three levels, from which management of storm operations takes place;
- deployment of emergency service personnel;
- provision of expert technical advice on storm modelling by State and Australian Government agencies when requested by DFES;
- provision of expert technical advice on roadways and transport routes by the Main Roads WA, when requested by DFES; and

- tasking of agencies in a coordinated manner in support of DFES. Agency procedures are then employed to carry out tasks.

In accordance with the *EM Act 2005*, local government is responsible for the development of local emergency management arrangements. The Local Emergency Management Committee (LEMC) is to provide advice to local government in this regard.

3.2.1 Groups with Special Needs

Special-needs groups include individuals and groups of people within the community for whom special consideration must be given in state, district and local level plans. These groups may require unique arrangements in regard to resources, mobility, timings, support or communications when responding to an emergency.

State EM Policy Section 4.6 and State EM Plan Section 4.6.1 outline the individuals and groups whose circumstances require special consideration in emergency management planning.

Special-needs groups should be included in the development of local risk plans for inclusion in Local Emergency Management Arrangements.

3.2.2 Resources

The identification of appropriate and adequate resources and expertise is essential to preparedness for a storm emergency. Planning at all levels should reference resource management, inventory and acquisition arrangements.

Resources that are used in storm emergencies may be required at short notice and may include: urban search and rescue (USAR) resources, transport resources, earth moving machinery, cranes, shoring and tunneling equipment, signage, electricity generating plants, lighting, pumps, temporary toilet facilities, medical equipment and drugs.

DFES is responsible for the overall provision and management of resources required to physically respond to a potential or actual storm emergency, including acquisition, pre-positioning and inventory management. Combat agencies and support organisations are required to provide their own resources in the first instance and to make requests for additional resources to DFES as required.

Local and district emergency plans should incorporate the use of community and industry resources, especially in relation to accommodation and welfare. Such plans should also identify methods, such as resource registers, to acquire community resources during a storm emergency.

Where an operation is beyond the resources of the State, a request for assistance from other jurisdictions may be made in accordance with section 3.7.

3.2.3 Training

DFES is responsible for training and equipping an emergency service capable of assisting the community to manage the effects of a storm.

Emergency management and support agencies are also expected to provide trained and equipped personnel. DFES is responsible for conducting multi-agency exercises for the relevant level of emergency management, thereby ensuring all agency personnel are aware of their role in the organised response.

3.3 Community Information

DFES, local governments, and BoM provide a contribution to education programs developed to inform and educate the public on storm notification, storm risk and storm management.

During storm events, DFES will provide community information in a coordinated manner through the Incident Controller and/or Operational Area Manager.

Media and public information strategies are reviewed annually by DFES to ensure appropriate communication of storm information to the community.

3.4 Evacuation Arrangements

Evacuation arrangements are addressed in section 4.14 Evacuation in the response section of this plan.

3.5 Local and District Hazard Emergency Management Plans

Where storm prone areas are identified as a risk to the community, DFES may develop relevant local storm plans which should consider:

- Transfer of information from storm risk maps to LEMC district based maps;
- Analysis and confirmation of damage projections;
- Development of map overlays or other data modelling for:
 - Critical facilities
 - Special needs facilities
 - Special needs populations
 - Transportation lifelines
 - Hazmat sites and facilities
- Determination of areas where damage is likely to occur and identification of areas where the population is exposed to greatest risk;
- Ascertain demographics for at-risk populations;
- Implementation of steps to reduce likely effects; and
- Resource management, inventory and acquisition arrangements.

DFES may develop Regional or District Storm Plans to coordinate activities during storm emergencies in addition to, or in place of, local storm plans.

3.6 Western Australia Border Agreements

Currently, Western Australia is not a party to any border agreements in relation to storm emergencies. Requests for assistance will be treated on an individual basis between State/Territory Governments.

3.7 Arrangements for Assistance from Other Jurisdictions

Should a storm emergency be beyond the resources of the State, support may be requested from the Australian Government, other States or overseas.

3.7.1 Australian Government Physical Assistance

The provision of Australian Government physical assistance is dependent upon established criteria and requesting arrangements. All requests for physical assistance are to be made in accordance with State EM Policy 5.10 and State EM Plan 5.6.

3.7.2 Defence Assistance to the Civil Community (DACC)

Defence Assistance to the Civil Community (DACC) can be provided in a number of ways, which are defined as categories of assistance in State EM Response Procedure 20.

Requests for Category 1 DACC assistance are coordinated through the Manager Joint Operations Support Staff (MJOSS), or their Liaison Officer (LO), who will liaise directly with the Local Australian Defence Force (ADF) Commander to provide assistance. Availability of these resources should be identified in Local Emergency Management Arrangements.

Category 1 DACC is emergency assistance for a specific task(s) provided by a Local ADF Commander/Administrator from within their own resources, in localised emergency situations when:

- a. immediate action is necessary to save human life, alleviate suffering, prevent extensive loss of animal life, or prevent widespread loss/damage to property; and
- b. local civilian resources are inadequate, unavailable or cannot be mobilised in time.

Other categories of DACC Assistance may be provided at the discretion of the Australian Government where the State requests Australian Government physical assistance. In these circumstances the initial resource request should be made through DFES, who will coordinate with the MJOSS or their LO in accordance with State EM Plan Section 5.6.1 and State EM Response Procedure 20.

3.7.3 Interstate Assistance

Assistance from other jurisdictions, and the process involved, will be determined by DFES in accordance with the conditions prevailing at the time.

3.8 Arrangements for Assistance to Other Jurisdictions

Assistance to interstate, overseas and other jurisdictions for storm emergencies will be coordinated by DFES. This will include determination of the process involved and recognition of pre-existing arrangements for inter-jurisdictional assistance by other agencies where such arrangements exist.

PART 4 RESPONSE

4.1 Principles

The management of a storm emergency is based on a graduated approach using the following guiding principles:

- DFES is the Controlling Agency for storm emergencies in WA⁵;
- DFES is responsible for activating and controlling the response to a storm emergency within WA;
- DFES will use arrangements which employ identified emergency management agencies and support organisations (refer to Appendix C) to provide an effective and coordinated response;
- A storm emergency in WA will be managed using the emergency management and operational principles detailed in State EM Policy Section 5 and State EM Plan Section 5;
- Should another hazard occur as a consequence of a storm emergency and, if DFES is not the HMA/Controlling Agency for the consequential hazard, then the provisions of State EM Plan 5 will apply. DFES shall remain responsible for the overall management of the storm emergency;
- Responsibility for resourcing and responding to an emergency initially rests with the Incident Controller at the local level;
- An emergency beyond the capability of local resources will receive support from district resources. State resources will be provided if district resources are inadequate; and
- Communication between local, district and State authorities is essential to ensure intelligent and timely application of resources to manage the emergency.

4.2 Storm Warning System

Under Section 6 of the Australian Government *Meteorology Act 1955*, the Bureau of Meteorology (BoM) has a responsibility for the issue of warnings of gales, storms and other weather conditions likely to endanger life or property.

The Perth Regional Office of the Bureau of Meteorology (BoM) issues warnings for severe storms. Severe Weather Warnings will be issued for most cool season events and Severe Thunderstorm Warnings when the main threat is from thunderstorms and during the warm season.

⁵ In accordance with State EM Policy Section 5 and State EM Plan Section 5.

4.3 Severe Weather Warnings

These provide a single type of warning that will advise the community on the threat of severe weather that is not covered by bushfire, cyclone or severe thunderstorm warning services. Severe Weather Warnings allow one warning to cover a multitude of phenomena caused by one weather pattern.

4.3.1 Issue of Severe Weather Warnings

Severe Weather Warnings can be issued up to 30 hours in advance for particularly strong systems that are likely to produce widespread severe weather. Generally, shorter lead times of 6 to 12 hours are provided. The warnings are updated at least 6 hourly but can be issued more often as necessary, particularly when severe weather is approaching Perth.

The following phenomena are warning for:

- Damaging winds (wind gusts 90-125 km/h)
- Destructive winds (wind gusts in excess of 125 km/h)
- Heavy rainfall, that may lead to flash flooding
- Abnormally high tides.

Large swells and/or dangerous surf conditions are not warned for specifically but can be mentioned in the body of a Severe Weather Warning.

4.3.2 Contents of Severe Weather Warnings

Severe Weather Warnings consists of the following information:

- The title of the warning. It will take the form of: 'Severe Weather Warning for' ...damaging wind/destructive wind, heavy rainfall/abnormally high tides.
- Weather districts affected.
- Time of issue.
- Area affected using well-known towns.
- Description of the weather situation.
- Description of the expected phenomena, expected time of occurrence and duration of event.
- Reports/observations when available.
- A statement reflecting the frequency of occurrence of the expected phenomena.
- A DFES action statement.
- The time at which the next warning will be issued.

4.4 Severe Thunderstorm Warnings

Warnings are not issued for every thunderstorm. A Severe Thunderstorm Warning will be issued when one or more of the criteria are observed or forecast. Warnings will be issued for the Kimberley and Pilbara in the event of an organised squall line that is expected to produce gusts in excess of 90 kilometres per hour. Due to their high frequency and relatively small impact area of each storm, warnings will not be issued in the Kimberley and Pilbara for thunderstorms causing flash flooding and/or severe wind gusts unless they are in the form of a long-lived, organised squall line.

4.4.1 *Issue of Severe Thunderstorm Warnings*

A Severe Thunderstorm Warning will be issued when:

- An existing thunderstorm exhibits severe characteristics, particularly on radar or when a report of severe thunderstorms has been received.
- Thunderstorms have developed in an environment conducive for severe thunderstorms, a severe thunderstorm is reported, or there is strong evidence of an impending severe thunderstorm, and it is expected to persist or when existing thunderstorms are likely to develop into a severe thunderstorm.

The lead-time for initial warnings will be about 6 hours and warnings will be updated every three hours or immediately on receipt of observations confirming severity. If severe thunderstorms are observed on radar and are threatening a major population centre, then warnings will be issued more frequently.

4.4.2 *Contents of Severe Thunderstorm Warnings*

Severe Thunderstorm Warnings can contain the following information:

- Expected phenomena (large hail, damaging/destructive winds, heavy rainfall)
- Weather districts affected
- Time of issue
- Localities affected using agreed set of major and minor towns
- Description of weather situation and the expected or observed phenomena and lively movement.
- Description of recent recorded events relevant to the warning.
- Statement on how frequent this type of weather and severity is experienced.
- DFES action statements.
- Time of next issue.

4.4.3 *Distribution of Warnings*

BoM issues warnings through media outlets, email, internet, marine communications and aircraft communications.

Should additional support be required to issue warnings or information in a particular emergency, DFES may call upon the State Emergency Public Information Coordinator (SEPIC) to activate the State Emergency Public Information arrangements⁶.

4.5 Alert

When meteorological conditions have potential to generate a storm emergency, BoM will provide DFES with information about the storm and may issue Severe Weather or Severe Thunderstorm Warnings. DFES may also receive initial information about storm impact from agencies or from the community.

Upon receipt of initial information about the storm, DFES will assess whether a storm emergency exists and may place some or all combat agencies and support organisations on alert. Organisations placed on “alert” should prepare to respond if needed and await DFES instructions before “activating” significant resources.

4.6 Activation

When DFES assesses that the storm emergency will require a significant response, it shall “activate” emergency resources, combat agencies and support organisations which are appropriate to the intensity and location of the storm. This may include activation of relevant emergency personnel and local or district plans as required.

The level of implementation of plans and operational structures can vary considerably depending upon circumstances. Factors which may influence the level of response include the degree of threat to a community, the number of DFES districts impacted by the storm and whether a multi-agency response is required.

More detail of the sequence of activation is shown in the ALERT and CALLOUT phases of Appendix D.

4.7 Levels of Response

Sound emergency management requires a graduated approach which is appropriate to the circumstances of the emergency.

State EM Response Procedure 2 describes the process for making an appropriate incident level declaration and associated responsibilities. The declaration of an incident level is a critical component of emergency management in terms of triggering the responsibilities and actions of emergency management stakeholders to ensure a response in which the size of both the Incident Management Team (IMT) and the coordination structure are proportional to the size of the storm emergency. State EM Response Procedure 2 enables one of three operational levels to be selected depending upon the characteristic “factors” of the emergency. This procedure is aligned with State EM Plan Section 5.1.5. The descriptors are provided as guidance to DFES Operational Managers and are used for all of DFES’s HMA and Emergency Management Agency responsibilities (refer Appendix C).

⁶ State EM Policy Section 5.6, State EM Plan Section 5.3.1 and the State Emergency Public Information Plan.

4.8 Incident Management System

During all emergencies, DFES will use the Australasian Inter-service Incident Management System (AIIMS). All agencies with agreed responsibilities under this plan are encouraged to ensure their personnel are familiar with and able to work within the AIIMS structure. Further information on incident management is detailed in State EM Plan Section 5.

4.9 Site Organisation

DFES has a State Operations Centre (SOC) available 24/7 and a number of Regional Operations Centres (ROC) around the State to:

- provide a robust facility from which to oversee the coordination of emergencies;
- facilitate coordination with other emergency service agencies and emergency management agencies;
- coordinate State and regional/district response to storms and other emergencies for which DFES has responsibility;
- manage the dissemination of information to the community; and
- provide appropriate advice to all levels of government.

4.10 Hazard Management Structure and Arrangements

In assessing a storm emergency, DFES may determine that the response requires a level two or level three management structure as per table 3. When such management structures are required, DFES (as the HMA) shall appoint an Operational Area Manager(s) (OAM). The OAM will assume overall management of the storm emergency within their defined operational area.

4.10.1 Incident Management

DFES, through the OAM, will appoint the IC(s) responsible for the overall management and control of an incident within specific localised communities or geographical areas.

4.10.2 Liaison Officers

All agencies are requested to provide a Liaison Officer (LO) upon activation of the response section of Westplan - Storm. The LO must possess sufficient experience and seniority to assist DFES. LOs may be the representatives on the relevant Incident Support Group (ISG) or Operational Area Support Group (OASG). Some agencies may nominate their Agency Commander as the LO.

4.11 Response Priorities

The response to a storm emergency shall be based on the priorities of:

- Life;
- Critical infrastructure;
- Property; and; and
- Environment.

The safety of personnel tasked to the incident will be the fundamental priority in all phases of incident management.

Priorities for Incident Action Planning (IAP) are:

- The first priority will address the protection of community members and measures to keep them informed;
- The protection of property, critical infrastructure and community assets will be the next priority; and
- Protection of conservation and environmental values are to be factored into IAPs as the subsequent priority.

4.12 Multi Agency Support Structure and Arrangements

State EM Policy Section 5 and State EM Plan Section 5 detail the multi-agency support structure used for different levels of emergency. The following paragraphs elaborate on how this policy will be applied during storm emergencies.

4.12.1 Incident Support Group (ISG)

The Incident Support Group/s consist of the Local Emergency Coordinator and Liaison Officers from local agencies/organisations involved in the response to and recovery from an incident. Its purpose is to assist the Incident Controller through the provision of information, expert advice, support and resources relevant to each organisation.

DFES (as the Controlling Agency) shall appoint the Chair of the ISG and determine membership of the ISG. The Incident Controller shall activate the ISG when an incident requires the coordination of multiple agencies.

4.12.2 Operational Area Support Group (OASG)

When the FES Commissioner (as the HMA) identifies that multiple agencies need to be coordinated at a district level or multiple incidents are occurring simultaneously in one Operational Area, it may activate the OASG, which will be convened by the OAM.

Membership of the OASG will be the OAM appointed by the HMA, the District Emergency Coordinator and members (liaison officers from the key agencies involved in the response to and recovery from the incident). The OAM will be the Chair of the OASG.

Minimum membership of an OASG for a storm emergency is:

- DFES (Chair)
- Department for Child Protection and Family Support (CPFS)
- Department of Parks and Wildlife
- Department of Planning
- Department of Health (WA Health)
- Lifelines agencies as appropriate
- Local government representative
- Main Roads WA
- WA Police

4.12.3 State Emergency Coordination Group (SECG)

A State Emergency Coordination Group (SECG) is established during a state of emergency, or may be established where an emergency occurs or is imminent, at the request of the FES Commissioner (as the HMA), or on the initiative of the State Emergency Coordinator (SEC), to assist in the provision of a strategic, coordinated multi-agency response to and recovery from the emergency. In addition, if a Level 3 incident occurs, the HMA must consult with the SEC to determine if a SECG should be established.

The SECG is established in accordance with State EM Policy Statement 5.4.7, State EM Plan Section 5.2.3 and State EM Response Procedure 4.

Triggers for activation of a SECG may include, but are not limited to:

- a storm has had a significant impact on a major community;
- a widespread storm damage to residential areas or a large geographical area containing communities or assets at risk; or
- a significant risk to critical infrastructure.

The requirements for membership of the SECG are outlined in Section 26 (3) of the *EM Act 2005*, which requires that the membership include:

- the SEC, who is also the Chair;
- the Chair and Executive Officer of the SEMC;
- a representative of the HMA (FES Commissioner);
- a representative of the local governments in the emergency area or in the area where the emergency is occurring or imminent, as the case requires, nominated by the SEC; and
- any other members the SEC considers are necessary.

In the case of a storm emergency, it is recommended, in consultation with the State Emergency Coordinator (SEC) that the SECG Membership should also include, as required:

- W A Police
- Main Roads WA
- Bureau of Meteorology
- Department of the Premier and Cabinet (State Recovery Coordinator)
- CPFS
- WA Health
- Department of Water
- Department of Education
- Department of Parks and Wildlife
- Department of Aboriginal Affairs
- Department of Food and Agriculture WA
- Department of Planning
- Industry representatives
- Telstra
- Office of Energy
- Water Corporation
- Western Power
- Brookfield Rail
- Any other representatives as considered necessary by the SEC.

4.13 Emergency Powers

The FES Commissioner has powers in relation to natural disasters under the *FES Act 1998*. These powers are wide-ranging and are normally adequate to respond to storm emergencies. Should additional powers be required, the *EM Act 2005* can be used to invoke emergency powers through the declaration of an 'Emergency Situation' or a 'State of Emergency'.

4.14 Evacuation

The decision to evacuate residents from areas after impact is the responsibility of the IC. The decision will normally be taken in consultation with key stakeholders.

The responsibility for implementing the evacuation rests with DFES (as the Controlling Agency), which may require support from other agencies, particularly WA Police and the CPFS.

DFES is responsible for arranging transport requirements for the evacuation from the emergency site. Local and district resources should be used wherever possible.

Refer to State EM Policy Section 5.7 and State EM Plan Section 5.3.2 for further guidance on evacuation.

4.14.1 Triggers for Evacuation

During a Storm Emergency, DFES may evacuate residents in risk prone areas due to factors such as:

- **Structural Collapse** – Buildings that are at risk of structural collapse as a result of storm damage should be evacuated.
- **Storm affecting properties** – Evacuation may occur if it is deemed likely that properties could be at risk from the effects of a storm.
- **Isolation of properties** – Persons who are not prepared for isolation or unsuited due to medical conditions, disabilities, age, etc. should be encouraged to evacuate.
- **Failure of essential services** – Failure of lifelines such as sewerage, power, telecommunications and water pose significant health risks to the community. In the event of any or all of these systems failing, evacuation of individuals, families and the community may be necessary.

4.14.2 Facility Evacuation Plans

Local industry may have site specific evacuation plans which form part of their Occupational Safety and Health strategies. Additionally, schools, hospitals, detention centres, prisons, shopping centres and public buildings may also have site or building evacuation plans. These plans should be developed in consultation with the LEMC to ensure they are realistic in terms of resource availability, timeliness and the risks created by the hazard.

4.14.3 Notification of Evacuation Arrangements

The IC is responsible for ensuring the accuracy of the Emergency Public Information, approving its release in coordination with the relevant agencies and terminating its broadcast. The Standard Emergency Warning Signal must only be used under strict instruction as advised by the HMA (the FES Commissioner) during an emergency, as defined by the EM Act, in circumstances when it is necessary for the community to take some action to prevent or minimize the loss of life or prejudice to the safety or harm to the health of persons or animals or destruction of or damage to property or any part of the environment.

4.14.4 Evacuation of Pets

Evacuation of pets will be conducted at the discretion of DFES subject to operational circumstances.

Due to safety restrictions, it may not be possible to allow pets to accompany their owners when transported via aircraft or boats.

Assistance animals (guide dogs, diabetic dogs, etc.) will remain in the care of their owners throughout the evacuation. This includes transport and access into evacuation centres.

4.14.5 Refusal to Evacuate

Sometimes community members refuse to comply with a decision to evacuate an area. Management of such situations by the Controlling Agency (DFES) must include:

- provision of clear instructions to persons conducting an evacuation with respect to what action should be taken where a person refuses to evacuate;
- ensuring, as far as practical, that those who refuse to evacuate understand the risks of remaining and are capable of making an informed decision;
- where possible, implement plans to track the welfare of remaining (i.e. non-evacuated) residents.

4.14.6 Return of Evacuees

DFES (as the Controlling Agency) is responsible for managing the return of persons evacuated as a result of a storm. It should be ensured that there is an effective plan in place for returning the displaced community, including provision for people with special needs. The return phase of evacuation may be executed in stages and should be subject to planning. This should include issues such as community safety, restoration of essential services and provision of welfare support services.

4.15 Support Plans

Should additional support be required during a storm emergency, it will initially be sourced through the appropriate liaison officer. Where the need for additional support requires a more coordinated approach, the following plans may be activated:

- State Health Emergency Response Plan;
- State Emergency Public Information Plan;
- State Emergency Telecommunications Plan; and
- State Emergency Welfare Plan and its annexures on Reception and Registration and Reunification.

In addition, the recovery provisions outlined in Section 6 of this Westplan may be activated.

The following paragraphs contain additional advice about triggers and processes for some of the support arrangements.

4.15.1 Health Response

The coordination of a state-wide WA Health response to a major disaster is through the State Health Coordinator (SHC) who has overall control and coordination of the health response.

The initial coordination of Health Services resources will be at a local level; this can be escalated to a district then state level. Should a Storm Emergency result in numbers of casualties beyond the capabilities of local health services, the State Health Emergency Response Plan can be activated to provide further support.

Activations of State Health Emergency Response Plan will be managed from the State Health Incident Coordination Centre (SHICC). The SHICC will be in direct contact with DFES and will liaise with Regional Health Coordinators and health stakeholders. The overall operational management, preparation and assessment of casualties in a major emergency will be managed by the SHICC.

4.15.2 Communications

The provision of communications for emergency response measures under Westplan - Storm are based on the use of normal day to day communication facilities of participating organisations as far as practicable. Should these services be inadequate, additional resources may be sought in accordance with the State Emergency Telecommunications Plan.

The DFES has a public emergency assistance line (132500) to facilitate the provision of emergency assistance to the community.

If communication with a community at risk has not been established, DFES may dispatch a reconnaissance team including medical and communication responders at the first available opportunity.

4.15.3 Public Information and Media Management

State EM Policy Section 5.6, State EM Plan Section 5.3.1 and the State Emergency Public Information Plan detail the emergency management arrangements for provision of emergency public information (EPI). State EM Policy Section 5.6 and State EM Plan Section 5.3.1 detail the responsibilities and requirements for HMAs, Emergency Management Agencies and Support Organisations in providing timely, accurate and consistent EPI to communities at risk.

DFES has arrangements to ensure the community of Western Australia is informed of Storm Emergencies.

DFES Public Information Operational Plan (PIOP) is designed to provide a framework for DFES communication to the community, media and other stakeholders in a timely, consistent and accurate way during a Storm Emergency.

The PIOP addresses operational, resourcing and strategic considerations which could arise during an emergency. It takes into account internal and external stakeholders and includes media liaison, internal communication

and public information alerts. Hazard specific public information requirements are included in the PIOP.

4.15.3.1 Approval of Information

DFES only comments on matters within its jurisdiction and all information is approved prior to release.

During an emergency public information talking points about the storm response will be gathered by the DFES Public Information Officer (PIO), who may form part of the:

- Incident Management Team (IMT)
- Regional Operations Centre (ROC), or
- State Operations Centre (SOC).

Information is gathered by the PIO from the IMT, ROC or SOC and key stakeholders and used to develop talking points.

The talking points will be authorised by the DFES IC, DFES OAM or DFES Duty Assistant Commissioner (DAC) and used to complete media alert templates which are then distributed by DFES' Media and Public Affairs (MPA) team.

4.15.3.2 Delivery Methods

After information is approved, it will be distributed by the MPA team using some or all of the following:

- **Media and Web Alerts:** Templates of media alerts are filled in by MPA using the talking points provided from the PIO. This information is sent to all media outlets, used in media interviews and press conferences and posted to the alerts page of the DFES website, which can be linked via Rich Site Summary (RSS) feed and social media.
- **Emergency Broadcasts:** ABC radio broadcasts emergency information at quarter to and quarter past the hour during a major emergency. Where there is imminent danger, they will break into programming. DFES endeavours, through the Media Liaison Officer (MLO), to provide a very brief interview at ten minutes past the hour to lead into the quarter past update. Alerts provided by DFES are read out word for word.
- **DFES Information Line – 13 3337:** The telephone number that the public can call to listen to recorded information about an emergency incident is **13 3337**. This will be updated as soon as new information is available and/or at regular intervals.
- **DFES Call Centre:** DFES call-takers answer telephone queries from the public. (When this number is not staffed, it is diverted to the information line).
- **TV Crawler:** Television crawlers will be used for major emergencies only.

- **Emergency Alert:** Emergency Alert delivers critical public information to people in a specific location who are facing an imminent threat. It utilises the public (telephone) network and can only be authorised by the DFES Duty Assistant Commissioner or delegate.
- **Media Releases:** General information about an incident prepared for the media and placed on the DFES website news page and sent to all media outlets. It is updated and disseminated regularly to satisfy mainstream media requirements, usually morning and afternoon, or as required.
- **Public Information Teleconference:** This is an opt-in service for media and public affairs decision makers in other emergency management and support agencies. A teleconference may be offered to keep other responders and incident participants up-to-date about communications activities and to identify emerging issues.

4.16 Financial Arrangements for Response

The SEMC website at www.semc.wa.gov.au/ details the criteria for a variety of funding situations and should be consulted to determine the funding arrangements.

Where no prior arrangement has been made with DFES, only expenditure approved by the IC, OAM or DFES Duty Assistant Commissioner will be funded by DFES.

4.17 Stand Down and Debriefing

The response element of this Plan may be stood-down (de-activated) when:

- the SECG (if activated) is stood down;
- the IC identifies that there is no longer a requirement for the plan to remain active; and
- There has been a handover to a Local Recovery Coordinator in accordance with State EM Plan Section 6.
-

4.18 Contact Arrangements

The key organisations participating in this plan are shown at Appendix C. Ongoing contact with these organisations shall be through Liaison Officers appointed by each organisation.

Detailed contact arrangements for activation of Westplan - Storm and for communication with Liaison Officers are held by DFES.

PART 6 RECOVERY

Recovery management is the coordinated process of supporting emergency affected communities in the reconstruction and restoration of physical infrastructure, the environment and community, psychosocial, and economic wellbeing.

6.1 Responsibility for Recovery

It is a function of local government to manage recovery following an emergency affecting the community in its district⁷.

DFES, as the Controlling Agency with responsibility for the response to an emergency must initiate recovery activity during the response to that emergency.

DFES is to ensure timely notification of the emergency, liaison and appropriate inclusion of those with recovery responsibilities in the incident management arrangements.

DFES is responsible for ensuring that in combating the effects of the emergency, activities have regard for the need to facilitate recovery.

DFES is also responsible for the coordination of assessment of all impacts relating to all recovery environments prior to cessation of the response, including a risk assessment and treatment plan to provide for safe community access to the affected area.

The decision point from when the handover will occur from DFES to the local government to effect recovery will occur when the following circumstances arise:

- The community is no longer at risk from the hazard.
- Operational response activities are being managed, or able to be managed, at a local level.
- No further requirement for the HMA to provide leadership or coordination for the event and the leadership and coordination role becomes predominantly recovery focused.
- The remaining activities are reconstruction and restoration of physical infrastructure, the environment and community, psychosocial, and economic wellbeing of the community.
- Handover documentation is prepared.
- Once the handover is complete DFES may still assist in the recovery effort.

For further details refer to State EM Policy Section 6 and State EM Plan Section 6.

⁷ EM Act 2005 s 36(b)

PART 7 INCIDENT ANALYSIS / REVIEW

Recovery management is the coordinated process of supporting emergency affected communities in the reconstruction and restoration of physical infrastructure, the environment and community, psychosocial, and economic wellbeing.

7.1 Incident Analysis / Review

DFES conducts three levels of post incident analysis following operational incidents. These are:

- Operational Debrief
- Post Incident Analysis
- Major Incident Review

The level of analysis required will be determined by the DFES Deputy Commissioner in accordance with DFES Policy Statement No. 54 - Incident Analysis Policy. The OAM/IC will ensure that all agencies involved in a multi-agency emergency are provided with the opportunity to submit input into any post operational analysis. Upon acceptance of recommendations an implementation schedule is to be developed and monitored for timely completion.

Post Operation Reports shall be provided to SEMC in accordance with State EM Policy Section 5.11 and State EM Plan Section 5.7.

7.1.1 Investigation/Assessment

Where DFES identifies any issue which has, or is reasonably believed to have contributed to the impact of the emergency upon the community, an investigation may be conducted into that cause. The purpose of the investigation shall be to determine the issues leading to the event, with the intent of developing mitigation prevention strategies to reduce the associated risk to the community.

7.1.2 Identifying Mitigation Strategies

During the recovery process there is an opportunity to identify future mitigation and preventative strategies and often an opportunity to implement such strategies. DFES will identify key areas in the community infrastructure that failed during the storm and will promote actions and/or studies designed to minimise the effects of storms on the community in the future. Examples of potential strategies include increasing building construction standards, improving land-use management, and disaster-hardening of key community facilities and utilities.

APPENDICES

APPENDIX A – Distribution

Westplan - Storm is available in electronic form on the SEMC Secretariat website. Addressees on this list will be notified when a new or amended version of the Westplan is posted on the SEMC Secretariat website via the means shown below.

Organisation	Addressees	Notification Process
State Government Ministers	Minister for Emergency Services; Corrective Services; Small Business; Veterans	SEMC Secretariat
	Minister for Police; Tourism; Road Safety; Women's Interests	SEMC Secretariat
	Minister For Planning; Culture and the Arts	SEMC Secretariat
State Emergency Management Committee	All Members	SEMC Secretariat
	All Subcommittee Members	
	SEMC Executive Officer	
Department of Fire & Emergency Services	All staff	DFES General Circular
Emergency Management / Support Organisations	All agencies and organisations with responsibilities under this plan.	email
Local government	All local governments	WALGA newsletter
Community	Web search	SEMC Secretariat website
Australian Government Attorney General's Department	Australian Government Crisis Coordination Centre	email
Library Deposits	National Library Of Australia, Legal Deposits Unit	email
	State Library Of Western Australia, Battye Library	email

Table 4 Distribution List

APPENDIX B – The Storm Hazard

Introduction

Western Australia is subject to a range of storm related hazards but has two distinct storm patterns. These are cool season storms and warm season storms which are described in the following paragraphs.

Cool Season Storms

Cool season storms occur more frequently and usually have greater economic impact than warm-season storms. Two general types of storm cause severe winds during the cooler months:

- Widespread severe winds – Strong fronts and intense lows that cause sustained gale-force winds and severe gusts over a widespread area.
- Severe Local Wind Storms (SLWS) – Fronts that cause localised severe winds, including tornadoes.

Widespread Severe Winds

Strong fronts cause winds of gale-force intensity near the coastal fringe of the southwest producing mostly minor damage over a wide area. More intense events can:

- produce widespread wind damage, power outages and traffic disruption;
- cause widespread vegetation damage and property damage;
- be strong enough to un-roof houses in small areas;
- produce an increase in tidal levels known as a storm surge;
- combine with large waves to cause coastal erosion;
- produce heavy rainfall;
- spawn severe localised winds including tornadoes; and
- pose a major threat to shipping activities.

A characteristic of major westerly events is the strong winds accompanying showers and thunderstorms. These winds cause severe squalls typically between 90 km/h and 125 km/h. Gusts may be quite localised, becoming more widespread if associated with showers on a front or pre-frontal line. Events which have strong westerlies continuing for extended periods (sometimes 36 hours) may make a greater contribution to damage.

On average, there are three storm events per year with wind gusts over about 90 km/h and one major event every five years. Most events occur during the months of June, July, August and September, with some records as early as April and as late as November.

Severe Local Wind Storm (SLWS)

The most severe winds that occur in Western Australia are localised, typically causing a swathe of damage just tens of metres in width. SLWS may consist of tornadoes or downbursts, both having similar damage patterns. Significant damage usually indicates destructive winds in excess of 125 km/h caused by a tornado.

Apart from the strong fronts, systems that are more moderate can also produce a SLWS, making these events particularly difficult to forecast.

SLWS are typically short-lived and move at speeds of up to 80 km/h with narrow widths and typical path lengths of 5km. The intensity of most events rate F0 (62-117 km/h) or F1 (118-178 km/h) on the Fujita tornado scale. Some reach F2 category (179-250 km/h) such as the Collie tornado in 1960.

Severe winds move unevenly over the ground, especially in varying terrain. Exposed elevated areas are more vulnerable to severe winds than sheltered parts on the leeward side of hills. Fronts may spawn more than one tornado at a time.

Cool season tornadoes are very different from those associated with severe thunderstorms in the warmer months. Funnel clouds are rarely reported and visibility is typically very low, usually due to heavy rain. Many people have reported hearing a sound similar to an approaching freight train.

Although many SLWS are not reported, occurrences have been recorded from Geraldton to Southern Cross and near Esperance. Most have occurred in coastal areas between Perth and Albany, notably along the coastal strip between Perth and Busselton. A high proportion of reports are from the Mandurah and Rockingham areas.

There is a theoretical likelihood of tornadoes on nine days per year, but recent evidence suggests a realistic annual figure of about half this amount.

Coastal suburbs are more likely to experience SLWS than those further inland.

SLWS have been reported between April and October, most commonly in June. They can occur at any time of the day.

Storm Surge

One of the consequences of sustained gale-force winds about the lower west coast is storm surge. Storm surge is a rise in the normal water level caused by strong onshore winds and reduced air pressure. The impact is greatest if the storm surge peaks near the time of high tide. This can result in the inundation of foreshore areas on low lying coastal areas and in rivers and estuaries. A storm surge also exacerbates flooding on the coastal plain by not allowing the river water to escape out to sea. A worst case scenario therefore is to have the peak in the gale-force winds coincide with a high tide, along with riverine floodwaters coming downstream.

Coastal Erosion

Coastal erosion results when the pounding of large wind-generated waves combine with a storm surge. Historic events have damaged Fremantle North Mole and eroded beaches up to 25 meters in width between South Beach and Sorrento. Wave action may cause significant coastal erosion regardless of the normal tide level.

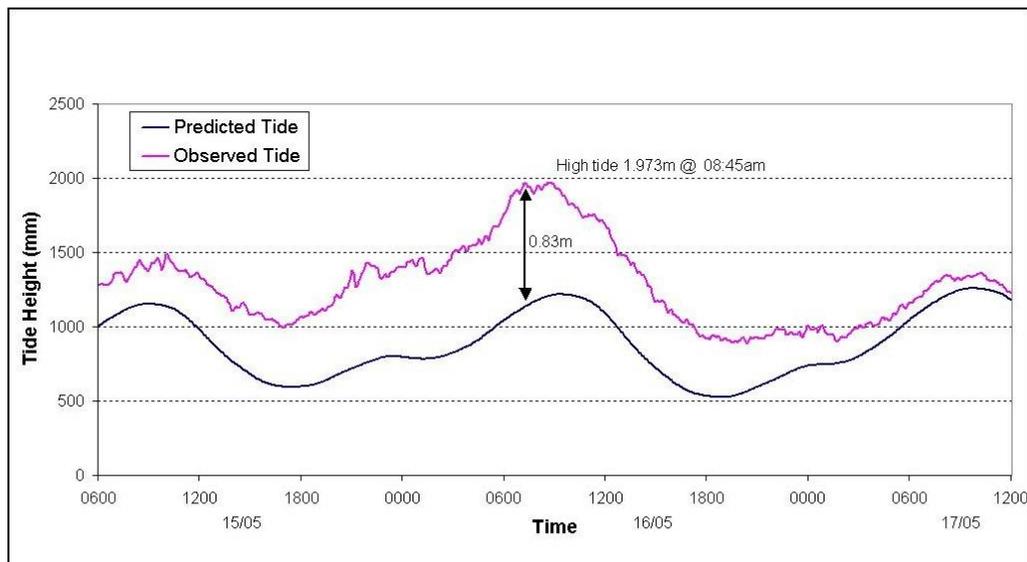


Figure 1. Actual tide above the predicted tide at Fremantle, 15-16 May 2003

Showing the impact of a storm surge during a cool season westerly storm
 (Data provided courtesy of the Department of Planning and Infrastructure, Western Australia)

Warm Season Storms

Storms in the warmer months are much less common in Perth than in most other Australian cities, but hailstorms causing over a billion dollars in damage have occurred.

There are several different types of severe warm season thunderstorms that affect Western Australia. The infrequent super cell type storms are capable of producing large hail, heavy rain, severe wind gusts and even tornadoes that can maintain an intense state for several hours, moving in different directions to normal thunderstorms. Super cells forming to the north of Perth are of particular concern when they move to the west of the typical south-easterly track and stay near the coast rather than moving inland. Such an event occurred on 22 March 2010 when severe super cell storms moved through the Perth Metropolitan Area causing large hail, heavy rain and severe winds which resulted in record levels of damage.

Most storm events are highly localised with individual thunderstorms typically extending over an area less than 10 km, moving at speeds of 20-40 km/h and lasting only a few hours. Multiple thunderstorm cells often form and affect a greater area.

Frequency of Thunderstorms

Between October and April, thunderstorms occur in Perth on average five to six times but few of these pose a serious threat to the community. Storms are more frequent to the north and east of Perth with eastern hills areas such as Chittering and Gidgegannup having a higher incidence of warm season storms than other areas.

Common Storm Effects

Rainfall

Although cool-season storms can have periods of heavy rain, they do not represent the strongest rainfall producing events. Cold fronts that generate slow moving cloud bands extending into the tropics typically cause the heaviest cumulative rainfall.

While most warm season thunderstorms are capable of producing heavy rain for a period during their mature phase, the amount of moisture in the lower levels of the atmosphere is usually a constraining factor for storms near the west coast.

Flash Flooding

Flash flooding is flooding that occurs within six hours of the precipitating weather event, and often involves rapid water level changes and high water velocity. The definition excludes flooding caused by dam failure, storm surge or tsunami although similar emergency management principles may apply to these events.

Flash flooding can have significant consequences for both the natural and the built environments. Unfortunately, many communities have inherited the legacy of land use planning decisions that have not allowed for the warning lead time required for a comprehensive response. Specific issues include:

- Inadequate access or egress roads
- Poorly designed or maintained drainage systems leading to exacerbation of the flood hazard (depth, velocity, duration)
- Building design with entry or exit through high hazard areas.

Flash flooding poses a significant risk to life and areas at risk of flash flooding are not well researched or documented in Western Australia. There are few warning systems developed specifically for flash flooding.

Hail

During the winter months, hail can occur in the cold air mass following the passage of a front. Winter hail is much less likely than summer hail and the size is generally less than one centimetre which rarely causes damage, but can block drains and cause water inundation of properties.

Larger hail is more common in spring and the warmer months. Hailstones up to six centimetres in diameter have been sighted but hailstones larger than two centimetres diameter are infrequent and are usually associated with super cell type storms.

Lightning

A minority of cool season events actually cause thunderstorms and lightning. In Perth, there are an average of two thunderstorms per month from May to July and one per month for the remainder of the year. The electrification process is weaker in cool season thunderstorms than those in the warmer months, so the number of lightning strikes is considerably less from May to July than in the months of January to March.

A significant consequence of summer thunderstorms is lightning which may cause damage to electrical equipment and lightning-ignited bushfires. Lightning caused deaths are infrequent in Western Australia, with only one death over the last decade.

Sources: Bureau of Meteorology

APPENDIX C - Roles and Responsibilities of Organisations

Introduction

DFES, through the FES Commissioner as the HMA, has the primary responsibility for managing storm effects in WA. However, DFES requires the support and assistance of other organisations to ensure an integrated community response occurs.

Agency Responsibilities

The agencies will undertake the agreed responsibilities, as detailed below. All the agencies are to maintain appropriate internal plans and procedures in relation to the specific agency responsibilities.

Note: The capability and commitment of each Local Government to undertake the tasks and meet the responsibilities identified in this State Plan should be confirmed by the HMA and detailed in the Local Hazard Emergency Plan and/or Local Emergency Management Arrangements. This will ensure the varying capabilities of individual Local Governments are recognised.

Organisation	Responsibilities
Bureau of Meteorology	<ul style="list-style-type: none"> a. Participate in research and development of storm models and techniques to improve storm forecasting /notification. b. Provide a storm prediction, interpretation and notification service. c. Establish and maintain data collection networks and monitor storm events. d. Store and provide historical storm intelligence data and information. e. Contribute to the planning, installation and maintenance of new and improved storm warning/notification systems. f. Participate in community awareness programs on storm warning systems. g. Provide a State Operations Centre Meteorologist (SOCMET) to DFES State Operations Centre, during normal working hours and/or after hours. Alternative liaison officers are Regional Manager Severe Weather, Manager Weather Services or Regional Director as required. h. Provide a representative for SECG, if required.
Department for Child Protection and Family Support (CPFS)	<ul style="list-style-type: none"> a. Management of services under the State Emergency Welfare Plan and its annexures on Reception and Registration and Reunification as required. b. Provide a representative on local and regional/district storm planning committees. c. In consultation with DFES, and consideration of available resources, determine the number and location of welfare centres to be opened during the storm emergency. d. In consultation with the Local Emergency Management Committee, determine a register of potential welfare centres. e. Staff Welfare/Evacuations centres. f. Facilitate evacuee registrations g. Participate in the emergency recovery arrangements for people affected by storms. h. Provide a liaison officer to DFES State Operations Centre, if required. i. Provide a representative for SECG, if required.

Department of Health	<ul style="list-style-type: none"> a. Coordinate the health response in a storm situation, including the activation of the State Health Emergency Response Plan if required. b. Advise DFES on all health aspects in relation to a storm situation c. Through the hospital stream, provide acute medical care and relief to injured persons. d. Through the public health stream, provide environmental health, public health, mental health, radiation health and communicable disease control services, as required. e. Maintain an awareness of the readiness of health service infrastructure including assessment of impact on clinical services, response and/or evacuation requirements. f. Provide health advice and support to the designated recovery committee. g. Provide a liaison officer to DFES State Operations Centre, if required. h. Provide a representative for SECG, if required.
Department of Planning	<ul style="list-style-type: none"> a. Incorporate storm mitigation measures into state and local planning and development processes. b. Provide representatives on the local and regional/district storm planning committees, where practicable. c. Provide a liaison officer to DFES State Operations Centre, if required. d. Provide a representative for SECG, if required.
Department of Water	<ul style="list-style-type: none"> a. Provide representatives on the local and regional/district storm planning committees, where practicable. b. Ensure storm mitigation and management measures are incorporated into the water infrastructure. c. Provide a liaison officer to DFES State Operations Centre, if required. d. Provide a representative for SECG, if required.
Energy Suppliers and Network Managers	<ul style="list-style-type: none"> a. Disconnect and restore energy services as prioritised by DFES or the designated recovery authority. Restoration priority will include consideration of other lifeline interdependence requirements. b. Provide technical advice to DFES in relation to energy supply, disconnection and restoration. c. Assist in the provision of emergency energy as requested by DFES or the designated recovery authority. d. Provide a representative on local and regional/district storm planning committees. e. Provide a liaison officer to DFES State Operations Centre, if required. f. Provide a representative for SECG, if required.
Department of Fire & Emergency Services	<ul style="list-style-type: none"> a. Discharge the duties of HMA and Controlling Agency for Storm Emergencies, in accordance with the <i>Emergency Management Act 2005</i> and State EM Policy Section 5 and State EM Plan Section 5. b. Liaise with other Controlling Agencies to ensure response operations are coordinated. c. Ensure the development and maintenance of response and mitigation plans specific to storms. d. Periodically test and validate local, regional/district and State storm plans.

	<ul style="list-style-type: none"> e. Recommend the adoption of mitigation strategies to State, District and Local Emergency Management Committees. f. In cooperation with other agencies, provide communities with storm risk awareness, information and education. g. Raise, train and equip an emergency service capable of responding to the effects of a storm. h. Liaise with local government in the provision of incident control centres in storm susceptible areas of the State. i. Appoint emergency managers at all levels for a particular storm. j. Chair regional/district storm planning committees. k. Facilitate the provision of assistance as required. l. Request the activation of, and provide a representative for SECG, if required.
Department of Parks and Wildlife	<ul style="list-style-type: none"> a. Notify DFES of environmental damage. b. Provide chainsaw teams to support DFES. c. Provide a representative for SECG, if required.
Local governments	<ul style="list-style-type: none"> a. Participate in community awareness programs on storm risks. b. Provide resources to assist DFES when requested. c. Make available suitable local government buildings to be used as welfare shelters. d. Issue closure notices for airports and airfields when necessary. e. Close and open roads within their jurisdiction, when requested by DFES. f. Provide details on road conditions to DFES. g. Initiate and lead the local community through the recovery process. h. Inspect and declare storm affected properties fit for habitation.
Main Roads WA	<ul style="list-style-type: none"> a. Provide advice to DFES of the potential and actual impacts of storm on the road system. b. Provide a representative on local and regional/district storm planning committees (where practicable). c. Close and open roads when requested to do so by DFES. This Plan recognises that the Commissioner of Main Roads (or delegated Officers) has the power to close or open roads under the <i>Main Roads Act 1930</i>. d. Assist in the recovery process through road and road infrastructure repair and reconstruction. e. Communicate road closures to the public. f. Provide a liaison officer to DFES State Operations Centre, if required. g. Provide a representative for SECG, if required.
Public Transport Authority	<ul style="list-style-type: none"> a. Provide advice to DFES of the potential and actual impacts of storm on the public transport system. b. Provide a representative on local and regional/district storm planning committees (where practicable). c. Close and open transport services when requested by DFES. d. Assist in the recovery process through rail infrastructure repair and reconstruction. e. Communicate service closures to the public. f. Provide a liaison officer to DFES State Operations Centre, if required. g. Provide a representative for SECG, if required.
Telstra	<ul style="list-style-type: none"> a. Provide advice regarding the provision of emergency communications services. b. Give priority consideration to emergency communications

	<p>requirements of authorities responsible for hazard and emergency management within WA. Actual service provision and restoration priorities will depend on Telstra's network configuration, the safety and availability of staff, material availability, local community issues and national and local security issues.</p> <p>c. Provide a Telstra liaison officer/s and other trained staff to operations/coordination centres, as requested and appropriate.</p> <p>d. Provide a representative for SECG, if required.</p>
Western Australia Police	<p>a. Support DFES in conducting evacuations.</p> <p>b. Assist DFES with security of evacuated areas.</p> <p>c. In the event of mass casualties, provide Disaster Victim Identification.</p> <p>d. Assist with the provision of road traffic management where appropriate.</p> <p>e. Maintain law and order.</p> <p>f. Provide representation on local and regional/district storm planning committees.</p> <p>g. Provide a liaison officer to DFES State Operations Centre, if required.</p> <p>h. Through the SEC activate the SECG.</p>
Brookfield Rail	<p>a. Provide advice to DFES of the potential and actual impacts of storm on the rail system.</p> <p>b. Provide a representative on local and regional/district storm planning committees (where practicable).</p> <p>c. Close and open rail services when requested to do so by DFES.</p> <p>d. Assist in the recovery process through rail infrastructure repair and reconstruction.</p> <p>e. Communicate service closures to the public.</p> <p>f. Provide a liaison officer to DFES State Operations Centre, if required.</p> <p>g. Provide a representative for SECG, if required.</p>
WA Water Corporation	<p>a. Restore water supplies and sewerage systems as prioritised by DFES or the designated recovery coordinator.</p> <p>b. Ensure water quality delivered by the system meets appropriate health standards.</p> <p>c. Provide a representative on local and regional/district storm planning committees (where practicable).</p> <p>d. Provide a liaison officer to DFES State Operations Centre, if required.</p> <p>e. Assist with the provision of potable water to affected communities until normal services are restored.</p> <p>f. Provide a representative for SECG, if required.</p>

APPENDIX D - Operational Sequence Guide - Storm

TABLE 8 Operational Sequence Guide - Storm			
Phase 1	ALERT (Notification that a severe storm response operation is pending.)		
#	BoM Warning Message	ACTIONS	
		DFES	Emergency Management Agencies and Support Organisations
1.1	<p>“Heads Up”</p> <p>Telephone advice from the Bureau of Meteorology Regional Forecasting Centre (BoM-RFC) that severe weather may occur. Alternatively, advice may be received from the BoM Meteorologist embedded in the SOC.</p>	<ul style="list-style-type: none"> a. On receipt of advice from BoM, DFES will notify appropriate DFES personnel. b. Arrange timely and appropriate teleconferences with the DFES duty personnel and Bureau of Meteorology Regional Forecasting Centre (BoM-RFC) / SOCMET. c. Activate to the necessary level of readiness and alert all involved agencies. d. Consider activating appropriate arrangements under Westplan - Storm and notifying relevant agencies with roles and responsibilities under the Plan. 	<ul style="list-style-type: none"> a. Receive operational information on the situation and distribute it within their organisation. b. Ensure relevant equipment and staff are available for deployment. c. Ensure the ongoing availability of Liaison Officers.

Operational Sequence Guide – Storm (continued)

Phase 2 CALL OUT (Mobilisation of the severe storm response operation.)			
#	BoM Warning Message	ACTIONS	
		DFES	Combat and Support Organisations
2.1	SEVERE WEATHER WARNING or SEVERE THUNDERSTORM WARNING	<ul style="list-style-type: none"> a. Initiate appropriate teleconferences with DFES duty personnel and BoM-RFC / SOCMET. b. Activate to the necessary level of readiness and alert all involved agencies. c. Obtain and disseminate up-to-date information from BoM-RFC / SOCMET to DFES duty personnel. d. Arrange appropriate community information messages. e. Appoint Operational Area Manager/s for identified areas. f. Appoint Incident Controller(s), responsible for the overall management and control of an allocated incident and the tasking of agencies in accordance with the situation. g. Facilitate ongoing liaison with Agency Liaison Officers. h. Determine the requirement for State assistance and activate support services, relevant agencies' operational plans/arrangements and State EM Procedures as required. i. Consider establishing ISG, OASG and SECG. 	<ul style="list-style-type: none"> a. Provide Liaison Officers to relevant Support/Coordination groups (if activated). b. Deploy personnel as required. c. Fulfill role and responsibilities as outlined in Westplan – Storm d. Provide assistance requested by DFES. e. Maintain liaison with DFES.
Phase 3 STAND DOWN (Completion of the severe storm <u>response</u> operation)			
#	BoM Warning Message	ACTIONS	
		DFES	Combat and Support Organisations
3.1	CANCELLATION OF SEVERE WEATHER WARNING or SEVERE THUNDERSTORM WARNING	<ul style="list-style-type: none"> a. Distribute the cancellation to DFES duty personnel. b. Inform participating agencies and hand over to Local State Recovery Coordinator in accordance with State EM Plan Section 6. 	<ul style="list-style-type: none"> a. Organisations are stood down in accordance with relevant procedures for each organisation. b. Recovery activities in accordance with associated plans continue

